Senior Composition Recital

An Honors Thesis (HONRS 499)

By

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Section I

Senior Composition Recital

Introduction

Music Theory 495 is the last theory course that Composition and Music Engineering Technology majors at Ball State University must complete. The description from the undergraduate catalog is, "Senior composition recital preparation, performance, and conducting preparation of senior recital of acoustic, electronic, and electroacoustic compositions. Recital is minimum one hour in duration and a balanced representation of the student's composition output. Ensemble performance and/or conducting is required. *Prerequisite:* permission of the area chairperson." The Senior Composition Recital is the presentation of what has been learned and accomplished during the student's time at Ball State University.

For Honors College students majoring in Composition or Music Engineering Technology, the Senior Composition Recital doubles as 499 Senior Honors Project. The university catalog's description of the Senior Honors Project is, "An inquiry culminating in an honors paper prepared in accordance with accepted standards of documentation and presentation under the supervision of a faculty member. *Open only to* seniors participating in the Honors College or completing the requirements for departmental honors." The Honors Thesis Guide adds, "Whatever type of project you undertake, bear in mind that the Senior Honors Thesis or Creative Project functions as the capstone of an Honors education, representing final proof of worthiness to be a Ball State University Honors College graduate." My Senior Composition Recital is my final presentation of the work I've completed at Ball State University and the culmination of my Ball State University experience.

Abstract

This presentation of my Senior Composition Recital includes the source code for the electronic compositions I created (where applicable) and the scores for the acoustic compositions I created. Also included are the program notes and descriptions of each composition. Finally, there is a Compact Disc of the Thursday, April 27, 2000 performance included.

Acknowledgements

I would like to take this opportunity to thank all of my professors. Without freshman music theory, I never would have learned the basics required for understanding music. I would especially like to thank Mr. David Foley, my thesis advisor and acoustic composition professor, for his knowledge of music composition and his willingness to share it with me. I would also like to thank Dr. Jody Nagel, Dr. Ernesto Pellegrini, Dr. Cleve Scott, and Dr. Eleanor Trawick for their help in guiding me in my musical endeavors the past four years. Thanks also to Dr. Purrone, my piano professor, for his willingness to perform in my recital and for three years of piano lessons. Thanks to my friends and my performers Ryan Wilson, Aura Strohschein, friends at BotSwin, the WD folks on-line, Trina Kissel, Paul Murphy, Dan Haag, Matt Doublestein, Paul Andrews, Dave Schurger, and Maggie Helms. Lastly, many thanks go out to my family, especially Mom, Dad, Grandma and Aunt Mare for their constant support and encouragement. I realize that these acknowledgements come no where close to describing the appreciation I have for what everyone has contributed to my life, but, I know I never would have made it without all of you.

Bibliography

1. Apel, Willi., and Daniel, Ralph T. *The Harvard Brief Dictionary of Music.* New York, NY: Pocket Book, 1960.

Julie Stucky
Senior Composition Recital Program Notes

Cascade (Spring 1999):

I created Cascade using the computer program C-Sound in fulfillment of the requirements for MUMET 327 with Dr. Jody Nagel. In Cascade, there are five main instruments and five main sections. I used a lot of glissandos, which is where the name "Cascade" comes from. The glissandos are mostly falling throughout the piece until the ending where the cascade reverses for an upward glissando finish.

Rhapsodie (Fall 1998-Spring1999):

Rhapsodie is my first acoustic composition for a composition class. I decided to write for the piano since it is my main instrument, and at the time it was the only instrument I felt familiar enough with to write for. I worked on this with Mr. David Foley for about a year starting out with a simple melodic idea and developing it. Surprisingly, most of the piece has just a two or three note texture even though it sounds much fuller. When beginning this piece, I sat at a piano and brainstormed different themes. The main theme is a single simple melodic line in A flat minor with two phrases. I broke up the theme into its simpler ideas and combined them in different ways in developing the texture, harmony, and form of Rhapsodie. The second main theme comes in about a third of the way through the piece. This theme I also developed both in creating harmonies for it and layering it with the first theme.

Travels (Fall 1998):

Dr. Jody Nagel teaches the computer program MAX in MUMET 325, which is what I used to create Travels along with the Kurzweil K2000 Keyboard. Travels has four main sections with smaller transitional sections in between. The first section uses a Japanese pentatonic scale with pitch classes 0, 2, 3, 7, 8. The second main section is a three-part chant. The entrances are staggered, but the voices are synchronized, and the interval between the voices doesn't change. The voices use the pitch set 2, 4, 6, 8, 11 for this section. The next main section has a gypsy feel to it as it has a lot of percussive sounds and a fun beat. I put in a block to keep a percentage of the signal from going through the patch and that makes the beat feel off occasionally. Finally, there is a transition back to the original section, and that has a melancholy feeling as the sounds gradually fade out.

Spasis (Fall 1999):

Spasis is the result of my composition class with Dr. Cleve Scott. The original samples that eventually became the sounds used in Spasis came from a cello, violin, piano, tin whistle, and my mom singing. The sounds were manipulated in Sound Hack, Peak, Sound FX Machine, and ProTools. The main types of manipulation include convolution, vary speed, pitch shift, reverb, flanging, multi-voice, echo, and feedback. I put Spasis together mainly in ProTools where I set up all the panning, dynamics, and texture for the piece. While listening to Spasis, try and imagine what would be happening if a video image accompanied this piece. I feel that it has a programmatic feeling, but I don't want to influence what images you create while listening.

Departure (Fall 1999 – Spring 2000):

Departure is a serial piece written for a woodwind quintet and chimes that I composed this year working with Mr. David Foley. I came up with the twelve-tone row while sitting at the piano and trying out different combinations of the twelve pitches in a scale. I wanted something with triads so I could have some nice tonal harmonies, and I didn't want it to be really chromatic or scalar, so I ended up with the row: 0, 8, 11, 3, 6, 1, 4, 7, 2, 5, 9, 10. I manipulated the row using its inversion, retrograde, retrograde inversion, and transpositions. In Departure, the row is played horizontally as a melodic line in different instruments, but it is also used vertically as I stack the tones in the row among the six instruments. Along with those techniques, I also use imitation. There are several thematic ideas that switch from instrument to instrument. Departure has a form ABA with only a few slight differences in the beginning of the second "A" section.

Thank you for coming to my recital. Please join me afterwards for some refreshments out in the lobby.

Special thanks to friends, family, and professors for support and encouragement for the past four years of my college experience. Please keep in touch; my e-mail address is juliestucky@yahoo.com

Section II

Cascade

Cascade (Spring 1999)

I created Cascade using the computer program C-Sound in fulfillment of the requirements for MUMET 327 with Dr. Jody Nagel. Music written in C-Sound requires two main files, an orchestra file and a score file. In the orchestra file, the composer actually creates the instruments that will be used. Using different kinds of equations and functions, different sounds are produced. An instrument can be programmed to have various vibrato, modulation, envelopes, panning effects, glissando effects, and any other musical effect that the composer desires for the instrument. The score file is a long list of numbers that tell which instrument plays at which time, what note they play, how long the note is, and whatever other information is needed for the given instrument to play correctly. C-Sound complies the files and has the orchestra file play the score file to create the composition.

In Cascade, I used five main instruments, which were developed over the semester. Cascade also has 5 main sections – ABABA. The first "A" section opens with a filter instrument. The trumpet instrument enters next with a glissando instrument quickly following it. The "B" section opens with the glissando instrument. There is a row for the glissando, and the string instrument picks up on it and manipulates it. Multiples of 4 are used in timing for extra pointillistic effects. The 3rd section is a reprise of the "A" section. It is expanded to almost double the length. Both the filter and glissando have downward motion with the glissando speeding up. The trumpet comes in again, though only for the first half, using the row from section B forward & reverse. Section 4 is the reprise of the "B" section. The major difference is that the soprano instrument is used instead of the string instrument, and the glissando, for the first time, is rising. The final section is similar to section "A", but there is no trumpet. This time, both the filter and the glissando are rising rather than falling. The filter instrument dies out first, and then the glissando fades out as its rising ascent speeds up.

```
;Cascades
;By Julie Stucky
;Project for MET 327
;Spring 1999
;Dr. Jody Nagel
;Ball State University

;functions**********************************************************

;sine, strings, trumpet
f1  0  1024  10  1

;soprano
f2  0  1024 -7  2800  142 2800 199 2650 142 2500 199 2250 142 2000 200  2000
f3  0  1024 -7  .25   142  .25  199 .094 142 .078 199 .062 142 .047 200 .031
f4  0  1024 -7  .04   142  .025 199 .038 142 .052 199 .061 142 .070 200 .079
f5  0  1024 -7  5.0   142  2.5  199 1.7  142  2.1 199 2.9  142 3.8  200 2.6

;~sine, triangle, square, sawtooth
f6  0  1024  10  1  0.80 0.400 0.60 0.30 0.400 0.2000 0.250 0.100 0.05 0.025 0.025   ;~sine
f7  0  1024  10  1  0.50 0.333 0.25 0.20 0.166 0.1430 0.125 0.111 0.10 0.091 0.083   ;triangle
f8  0  1024  10  1  0.00 0.333 0.00 0.20 0.000 0.1430 0.000 0.111 0.00 0.091 0.000   ;square
f9  0  1024  10  1  0.25 0.111 .0625 0.04 0.027 0.0204 .0156 .01234 0.01 0.008 0.000  ;sawtooth

;p fields**********************************************************

;p1    p2    p3   p4   p5    p6       p7
;instr1 start  dur  amp  ifc1  iseed                ; trumpet 1
;instr2 start  dur  amp  ifc   rand seed            ; strings 2
;instr3 start  dur  amp  freq                       ; soprano 3
;instr4 start  dur  amp  ifn   icf                  ; filter instr 4
;instr5 start  dur  amp  freq1 freq2    ifn         ; gliss instr 5
;instr6 start  dur                                  ; global var 6

;section 1**********************************************************
; The "A" section.  Opens with a filter instrument.  The trumpet instruments enters next with
; a glissando instrument quickly following it.

i6  00.00  32.50

i4  00.00  07.50  27000  1  1000                    ;filter
i4  05.50  05.00  22000  6  850
i4  10.00  04.50  18000  7  750
i4  14.00  03.50  13000  8  650
i4  17.00  03.00  10000  9  500
i4  19.00  02.00  07000  1  400

i5  03.50  15.50  14000  10.00  06.00  1           ;glissandi
i5  13.00  12.00  12000  10.00  06.00  6
i5  23.00  09.50  11000  09.00  05.00  7

i1  02.00  00.20  05000  08.075  0.123             ;trumpet
i1  02.25  00.20  05250  09.116  0.321
i1  02.50  00.20  05500  10.059  0.234
i1  02.75  00.20  05750  09.098  0.432
i1  03.00  00.20  06000  08.033  0.345
```

```
i1  03.25  00.20  06250  09.082  0.543
i1  03.50  00.20  06500  10.024  0.453
i1  03.75  00.20  06750  09.101  0.354
i1  04.00  00.20  07000  08.067  0.435
i1  04.25  00.20  07250  09.040  0.456
i1  04.50  00.20  07500  10.015  0.654
i1  04.75  00.50  07750  09.002  0.645
i1  07.50  01.00  06000  08.027  0.567
i1  08.00  01.50  07000  08.000  0.678
i1  16.50  01.00  06000  08.127  0.789
i1  17.75  00.75  05000  09.016  0.890
i1  21.50  00.50  06000  07.033  0.901
i1  22.50  00.50  05500  09.045  0.012
i1  23.00  00.50  05000  08.057  0.123

s

;section 2**********************************************************
; This is the "B" section.  The glissando instrument opens this section.  There is a
; row for the glissando and the string instrument picks up on it and manipulates it.
; Multiples of 4 are used in timing for extra pointillistic effects.

i6  00.00  46.00

i5  00.00  04.75  18000  09.075  08.002  6          ;glissandi
i5  04.00  04.50  17000  09.116  08.015  7
i5  08.00  04.25  16000  09.059  08.040  8
i5  12.50  04.00  15000  09.098  08.067  9
i5  16.00  03.75  14000  09.033  08.101  8
i5  20.00  03.50  13000  09.082  08.024  7
i5  24.50  03.25  12000  09.024  08.082  6
i5  28.00  03.00  11000  09.101  08.033  9
i5  32.00  02.75  10000  09.067  08.098  8
i5  36.50  02.50  09000  09.040  08.059  7
i5  40.00  02.25  08000  09.015  08.116  6
i5  44.00  02.00  07000  09.002  08.075  1

i2  02.00  00.75  04000  07.075  0.123          ;strings
i2  03.00  00.75  04250  09.116  0.132
i2  04.00  00.75  04500  08.059  0.213
i2  04.25  00.75  04750  10.098  0.231
i2  04.50  00.75  05000  08.033  0.321
i2  04.75  00.75  05250  06.082  0.312
i2  05.00  00.75  05550  09.024  0.234
i2  06.00  00.75  05750  10.101  0.243
i2  07.00  00.75  06000  07.067  0.324
i2  08.00  00.75  06250  05.040  0.342
i2  08.25  00.75  06500  09.015  0.432
i2  08.50  00.75  06750  08.002  0.423
i2  08.75  00.75  07000  09.116  0.345
i2  09.00  00.75  07250  07.059  0.354
i2  10.00  00.75  07500  10.098  0.435
i2  11.00  00.75  07750  06.033  0.453
i2  12.00  00.75  08000  05.024  0.543
i2  12.25  00.75  08250  08.101  0.534
i2  12.50  00.75  08500  07.067  0.456
```

i2 12.75 00.75 08750 09.040 0.465
i2 13.00 00.75 09000 08.015 0.564
i2 14.00 00.75 09250 07.002 0.546
i2 15.00 00.75 09500 08.059 0.654
i2 16.00 00.75 09750 10.098 0.645
i2 16.25 00.75 10000 06.033 0.567
i2 16.50 00.75 10250 07.082 0.576
i2 16.75 00.75 10500 08.024 0.675
i2 17.00 00.75 10750 09.101 0.657
i2 18.00 00.75 11000 10.067 0.765
i2 19.00 00.75 11250 08.040 0.756
i2 20.00 00.75 11500 06.015 0.678
i2 20.25 00.75 11750 08.002 0.687
i2 20.50 00.75 12000 10.033 0.768
i2 20.75 00.75 12250 09.024 0.786
i2 21.00 00.75 12500 08.015 0.876
i2 22.00 00.75 12250 08.002 0.867
i2 23.00 00.75 12000 09.098 0.789
i2 24.00 00.75 11750 09.033 0.798
i2 24.25 00.75 11500 09.082 0.879
i2 24.50 00.75 11250 08.024 0.897
i2 24.75 00.75 11000 09.101 0.987
i2 25.00 00.75 10750 09.067 0.978
i2 26.00 00.75 10500 09.040 0.890
i2 27.00 00.75 10250 08.015 0.809
i2 28.00 00.75 10000 08.002 0.908
i2 28.25 00.75 09750 10.033 0.980
i2 28.50 00.75 09500 10.082 0.098
i2 28.75 00.75 09250 09.024 0.089
i2 29.00 00.75 09000 09.101 0.901
i2 30.00 00.75 08750 09.067 0.910
i2 31.00 00.75 08500 09.040 0.091
i2 32.00 00.75 08250 08.015 0.019
i2 32.25 00.75 08000 08.002 0.109
i2 32.50 00.75 07750 10.082 0.190
i2 32.75 00.75 07500 07.024 0.012
i2 33.00 00.75 07250 07.101 0.021
i2 34.00 00.75 07000 09.067 0.120
i2 35.00 00.75 06750 09.040 0.102
i2 36.00 00.75 06500 08.015 0.210
i2 36.25 00.75 06250 08.002 0.201
i2 36.50 00.75 06000 07.024 0.123
i2 36.75 00.75 05750 07.101 0.132
i2 37.00 00.75 05500 09.067 0.213
i2 38.00 00.75 05250 09.040 0.231
i2 39.00 00.75 05000 08.015 0.321
i2 40.00 00.75 04750 08.002 0.312
i2 40.25 00.75 04500 07.101 0.234
i2 40.50 00.75 04250 09.067 0.243
i2 40.75 00.75 04000 09.040 0.324
i2 41.00 00.75 05000 08.015 0.342
i2 42.00 00.75 06000 08.002 0.432
i2 43.00 00.75 07000 09.067 0.423
i2 44.00 00.75 08000 09.040 0.345
i2 44.25 00.75 09000 08.015 0.354
i2 44.50 00.75 10000 08.002 0.435

```
i2  44.75  00.75  11000  09.040  0.453
i2  45.00  00.75  12000  08.015  0.543
i2  46.00  00.75  13000  08.002  0.534

s

;section 3*****************************************************
; This is a reprise of the "A" section.  It is expanded to almost double the length.
; Both the filter and glissando have downward motion with the gliss speeding up.  The trumpet
; comes in again, though only for the first half, using the row from section B forward & reverse.

i6  00.00  58.25

i4  00.00  00.25  27000  1  2000                ;filter
i4  00.25  00.25  25000  1  1900
i4  00.50  00.50  23000  1  1800
i4  01.00  00.75  21000  6  1700
i4  01.75  01.25  19000  6  1600
i4  03.00  02.00  17000  6  1500
i4  05.00  03.25  15000  6  1400
i4  08.25  05.25  13000  7  1300
i4  13.50  08.50  11000  7  1200
i4  22.00  13.75  90000  7  1100
i4  35.75  08.50  11000  7  1000
i4  44.25  05.25  13000  8  0900
i4  50.00  03.25  15000  8  0800
i4  53.25  02.00  17000  8  0700
i4  55.25  01.25  19000  8  0600
i4  56.50  00.75  21000  9  0500
i4  57.25  00.50  23000  9  0400
i4  57.75  00.25  25000  9  0300
i4  58.00  00.25  27000  9  0200

i5  09.00  13.75  14000  10.00  09.00  1        ;glissandi
i5  23.00  08.50  12000  09.50  08.50  1
i5  32.00  05.25  11000  09.00  08.00  6
i5  38.00  03.25  12000  08.50  07.50  6
i5  42.00  02.00  11000  08.00  07.00  7
i5  45.00  01.25  11000  07.50  06.50  7
i5  47.00  00.75  12000  07.00  06.00  8
i5  50.00  00.50  11000  06.50  05.50  8

i1  02.00  00.20  05000  08.075  0.123          ;trumpet
i1  02.25  00.20  05250  09.116  0.321
i1  02.50  00.20  05500  06.059  0.234
i1  02.75  00.20  05750  09.098  0.432
i1  03.00  00.20  06000  08.033  0.345
i1  03.25  00.20  06250  09.082  0.543
i1  03.50  00.20  06500  06.024  0.453
i1  03.75  00.20  06750  09.101  0.354
i1  04.00  00.20  07000  08.067  0.435
i1  04.25  00.20  07250  09.040  0.456
i1  04.50  00.20  07500  06.015  0.654
i1  04.75  00.50  07750  09.002  0.645
i1  07.50  01.00  06000  08.015  0.567
i1  08.00  01.50  07000  08.040  0.678
```

```
i1  16.50  01.00  06000  08.067  0.789
i1  17.75  00.75  05000  09.101  0.890
i1  21.50  00.50  06000  07.024  0.901
i1  22.50  00.50  05500  09.082  0.012
i1  23.00  00.50  05000  08.033  0.123
i1  23.50  00.50  04500  09.098  0.143
i1  24.00  00.50  04000  09.059  0.156
i1  24.50  00.50  04500  09.116  0.167
i1  25.00  00.50  05000  09.075  0.178

s

;section 4*****************************************************
; This is the reprise of the "B" section.  The major difference is that the
; soprano instrument is used instead of the string instrument, and the glissando
; for the first time is rising.

i6  00.00  46.00

i5  00.00  04.75  18000  08.002  09.075  6          ;glissandi
i5  04.00  04.50  17000  08.015  09.116  7
i5  08.00  04.25  16000  08.040  09.059  8
i5  12.50  04.00  15000  08.067  09.098  9
i5  16.00  03.75  14000  08.101  09.033  8
i5  20.00  03.50  13000  08.024  09.082  7
i5  24.50  03.25  12000  08.082  09.024  6
i5  28.00  03.00  11000  08.033  09.101  9
i5  32.00  02.75  10000  08.098  09.067  8
i5  36.50  02.50  09000  08.059  09.040  7
i5  40.00  02.25  08000  08.116  09.015  6
i5  44.00  02.00  07000  08.075  09.002  1

i3  02.00  00.75  04000  07.075                    ;soprano
i3  03.00  00.75  04250  09.116
i3  04.00  00.75  04500  08.059
i3  04.25  00.75  04750  08.098
i3  04.50  00.75  05000  08.033
i3  04.75  00.75  05250  07.082
i3  05.00  00.75  05550  09.024
i3  06.00  00.75  05750  07.101
i3  07.00  00.75  06000  09.067
i3  08.00  00.75  06250  09.040
i3  08.25  00.75  06500  09.015
i3  08.50  00.75  06750  08.002
i3  08.75  00.75  07000  09.116
i3  09.00  00.75  07250  08.059
i3  10.00  00.75  07500  07.098
i3  11.00  00.75  07750  09.033
i3  12.00  00.75  08000  10.024
i3  12.25  00.75  08250  07.101
i3  12.50  00.75  08500  08.067
i3  12.75  00.75  08750  09.040
i3  13.00  00.75  09000  08.015
i3  14.00  00.75  09250  10.002
i3  15.00  00.75  09500  08.059
i3  16.00  00.75  09750  09.098
```

i3 16.25 00.75 10000 08.033
i3 16.50 00.75 10250 07.082
i3 16.75 00.75 10500 08.024
i3 17.00 00.75 10750 09.101
i3 18.00 00.75 11000 10.067
i3 19.00 00.75 11250 08.040
i3 20.00 00.75 11500 09.015
i3 20.25 00.75 11750 08.002
i3 20.50 00.75 12000 10.033
i3 20.75 00.75 12250 10.024
i3 21.00 00.75 12500 10.015
i3 22.00 00.75 12250 08.002
i3 23.00 00.75 12000 07.098
i3 24.00 00.75 11750 10.033
i3 24.25 00.75 11500 09.082
i3 24.50 00.75 11250 09.024
i3 24.75 00.75 11000 09.101
i3 25.00 00.75 10750 09.067
i3 26.00 00.75 10500 09.040
i3 27.00 00.75 10250 08.015
i3 28.00 00.75 10000 08.002
i3 28.25 00.75 09750 08.033
i3 28.50 00.75 09500 07.082
i3 28.75 00.75 09250 08.024
i3 29.00 00.75 09000 09.101
i3 30.00 00.75 08750 09.067
i3 31.00 00.75 08500 09.040
i3 32.00 00.75 08250 08.015
i3 32.25 00.75 08000 08.002
i3 32.50 00.75 07750 08.082
i3 32.75 00.75 07500 08.024
i3 33.00 00.75 07250 09.101
i3 34.00 00.75 07000 09.067
i3 35.00 00.75 06750 09.040
i3 36.00 00.75 06500 08.015
i3 36.25 00.75 06250 08.002
i3 36.50 00.75 06000 08.024
i3 36.75 00.75 05750 08.101
i3 37.00 00.75 05500 09.067
i3 38.00 00.75 05250 09.040
i3 39.00 00.75 05000 08.015
i3 40.00 00.75 04750 08.002
i3 40.25 00.75 04500 08.101
i3 40.50 00.75 04250 09.067
i3 40.75 00.75 04000 09.040
i3 41.00 00.75 05000 08.015
i3 42.00 00.75 06000 08.002
i3 43.00 00.75 07000 09.067
i3 44.00 00.75 08000 09.040
i3 44.25 00.75 09000 08.015
i3 44.50 00.75 10000 08.002
i3 44.75 00.75 11000 09.040
i3 45.00 00.75 12000 08.015
i3 46.00 00.75 13000 08.002

s

```
;section 5 ***********************************************************
;  This is the final section.  It is similar to section "A", but there is no trumpet.
;  This time, both the filter and the glissando are rising rather than falling.
;  The filter instrument dies out first, and then the glissando fades out as it's rising
;  speeds up and up.

i6  00.00  34.00

i4  00.00  07.50  27000  1  0075                    ;filter
i4  05.50  05.00  22000  6  0150
i4  10.00  04.50  18000  7  0300
i4  14.00  03.50  13000  8  0600
i4  17.00  03.00  10000  9  1200
i4  19.00  02.00  07000  1  2400

i5  03.50  09.50  14000  05.00  08.00  1          ;glissandi
i5  13.50  07.50  12000  05.00  09.00  6
i5  21.50  05.50  10000  05.00  10.00  7
i5  27.50  03.50  08000  08.00  10.50  8
i5  31.50  01.50  06000  09.00  11.00  9
i5  33.50  00.50  04000  10.00  11.50  1

s

;section 6 ***********************************************************

f0 1

e
```

```
sr = 44100
kr = 441
ksmps = 100
nchnls = 2

gkpan init 0.50

;*********************************************************************************************
instr 1
; trumpet.orc
; Morrill Trumpet Design - Dodge, Computer Music,  p.129
; implemented by Dr. Jody Nagel, BSU  (The envelopes are wrong. They're only ASD env.s)
;p1   p2   p3  p4  p5   p6
;instr start dur amp ifc1  iseed

; SET CONSTANT PARAMETERS
isine    =       1          ;function #1 in the score defines 1 period of a sine wave
idur     =       p3
iamp     =       p4
ifc1     =       cpspch(p5)
iseed    =       p6
ifc2     =       1500       ;first formant fixed at 1500 Hz
ifm      =       ifc1
imax     =       2.66
iratio   =       1.8/2.66
iatt3    =       .03        ;carrier1 envelope
iatt4    =       .03        ;index envelope
iatt5    =       .03        ;carrier2 envelope
idec3    =       .15
idec4    =       .01
idec5    =       .3
irandev  =       .007
ifr      =       125        ;maximum vibrato width (deviation)
ivibwth  =       .007
ivibrate=        7 ;Hz
iportdev=        .03
iatt1    =       .6         ;vib width envelope
iatt2    =       .06        ;portamento envelope
idec1    =       .2
idec2    =       .01
isus1    =       idur - iatt1 - idec1
isus2    =       idur - iatt2 - idec2
isus3    =       idur - iatt3 - idec3
isus4    =       idur - iatt4 - idec4
isus5    =       idur - iatt5 - idec5

; PRODUCE VIBRATO CONTROL SIGNAL
krandev randi    irandev, ifr, iseed
kvibwth linseg   0, iatt1, ivibwth, isus1, ivibwth, idec1, 0
kvib    oscili   kvibwth, ivibrate, isine
kporta  linseg   0, iatt2, iportdev, isus2, iportdev, idec2, 0
kv      =        (krandev + 1) * (kvib + 1) * (kporta + 1)

; PRODUCE MODULATION SIGNAL
imaxdev=         imax * ifm
kdevenv linseg   0, iatt4, imaxdev, isus4, imaxdev, idec4, 0
```

```
adev     oscili    kdevenv, ifm * kv, isine

; PRODUCE MODULATED DOUBLE-CARRIER SIGNAL
kenv1    linseg    0, iatt3, iamp, isus3, iamp, idec3, 0
asig1    oscili    kenv1, (ifc1 * kv) + adev, isine ; FUNDAMENTAL

;
iamp2    =         iamp * .2
kenv2    linseg    0, iatt5, iamp2, isus5, iamp2, idec5, 0
asig2    oscili    kenv2, (ifc2 * kv) + (adev * iratio), isine ; FORMANT

;
asig     =         (asig1 + asig2) * (5./6.)          ;multiply by 5/6 to compensate the
         outs      asig, asig                         ;extra amplitude introduced by iamp2
endin     ;instr 1 (TRUMPET)

;*********************************************************************************

instr 2
; string.orc
; Schottstaedt String-tone simulation using a complex modulating wave
; Dodge, Computer Music, 2nd Ed., p. 136
; implemented by Dr. Jody Nagel, BSU
;p1   p2    p3   p4   p5   p6
;instr start  dur  amp  ifc rand seed

; SET CONSTANT PARAMETERS
isine = 1   ;fn#1 in the score file will use GEN10 to create a sine wave
idur = p3
iamp = p4
ifc = cpspch(p5)
ifm1 = ifc
ifm2 = 3 * ifc
ifm3 = 4 * ifc
i1 = 7.5/(log(ifc))
i2 = 15./(sqrt(ifc))
i3 = 1.25/(sqrt(ifc))
iatck = .2
idecay = .2
isustn = idur - iatck - idecay
iseed = p6

; DEFINE ATTACK FUNCTION
kf1 linseg 1, iatck, 0, isustn+idecay, 0

; CREATE COMPLEX MODULATION USING 3 MODULATORS
amod1   oscil    (kf1 + i1) * ifm1, ifm1, isine
amod2   oscil    (kf1 + i2) * ifm2, ifm2, isine
amod3   oscil    (kf1 + i3) * ifm3, ifm3, isine

;  CREATE SLIGHTLY RANDOMIZED VIBRATO
kvibdv  randi    .0075, 15, iseed  ;this last value is arbitrary
avib    oscil    kvibdv, 5.5, isine

;  CREATE PITCHED PART OF THE SIGNAL (the carrier)
acar    oscil    iamp, (ifc + amod1 + amod2 + amod3) * (avib + 1), isine
```

```
; CREATE ATTACK CHIFF
knsatck  = kfl * iamp     ;noise attack
kchfdev randi     knsatck, .2 * ifc, iseed  ; chiff deviation
achif     oscil     kchfdev, 2000, isine

; CREATE FINAL SIGNAL AND ENVELOPE
kenv      linseg    0, iatck, 1, isustn, 1, idecay, 0
asig = (acar + achif) * kenv
          outs      asig, asig
endin     ; instr 2 (Strings)

;*********************************************************************************

instr 3
; soprano.orc
;Chowning Soprano Instrument (Dodge, Computer Music, 2nd ed., p.132)
;implemented by Dr. Jody Nagel, BSU
; p1    p2     p3   p4   p5
;instr  start  dur  iamp  freq
isine = 1
idur = p3
iamp = p4 ; ( 0 . . . 1 ) normalized value
icps = cpspch(p5)  ;PITCH  (PCH 7.07 . . . 10.07)
ioct =  octpch(p5)

ioct1 = octpch(7.07)    ;Two-Point Formula.  X-values are pitch in OCT
ioct2 = octpch(10.07)   ; Y-Values are normalized index values (0 . . . 1)
iindx1 = 0              ; So, convert desired pitch into desired look-up index.
iindx2 = 1
iindx = (  ( (iindx2-iindx1)/(ioct2-ioct1) ) * (ioct - ioct1)  ) + iindx1

if2  table  iindx, 2, 1  ;function2 in SCO file
il1  table  iindx, 3, 1  ;function3 in SCO file
ia2  table  iindx, 4, 1  ;function4 in SCO file
il2  table  iindx, 5, 1  ;function5 in SCO file

ifm = icps
ia1 = 1 -ia2
ifc1 = icps ;Carrier, fundamental frequency
ifc2 = ( int( (if2/icps) + 0.5 ) ) * icps
iloge2 = 0.6931471806 ; natural log of the value 2.

ivibwth = 0.002 * ( log(icps)/iloge2 )   ; the value .2 (p.131) is wrong ! ! !

ivibrate = 5.5 ; a value between 5 and 6.5 depending on pitch
ifr = 125 ;Hz (Value used from the Morrill trumpet instrument)

; VIBRATO
krandmod  randi  ivibwth, ifr
kvibenv  linen  ivibwth, 0.6, idur, 0.1
kvib  oscili  kvibenv, ivibrate, isine ;
kporta linseg (-0.02),  .3,  (0.01), 0.1,  (0),  0.1,  (0)
kv  =  krandmod + kvib + kporta + 1

; MAIN FM INSTRUMENT
```

```
amod oscili  il1 * ifm, ifm, isine

icar1amp  =  (sqrt(iamp)) * ia1   ; ia1 = (1 - ia2)
kcar1env  linen  icar1amp, 0.1, idur, 0.08
acar1   oscili  kcar1env, (amod + ifc1) * kv, isine  ;FUNDAMENTAL

icar2amp  =  iamp * sqrt(iamp) * ia2
kcar2env  linseg  0, .05, icar2amp*.1, .05, icar2amp, idur-.18, icar2amp, .04, .1, .04, 0
acar2   oscili  kcar2env, ((amod * (il2/il1)) + ifc2 ) * kv, isine

asig = (acar1 + acar2) * 32767
outs      asig, asig

endin ;  instr 3 (Soprano)

;*********************************************************************************************

instr 4
;filter-based instrument that pans left to right to left...
;p1    p2    p3    p4    p5    p6
;instr  start  dur   amp   ifn   icf
;long notes for best panning effect?....

isine = 1
idur = p3
iamp = p4
iatk = (idur > 5 ? idur*0.4 :  idur*0.2)
idec = (idur > 5 ? idur*0.4 :  idur*0.2)
ifn = p5
icf = p6

;signal
kcfmod  oscili icf/2.5, 1, ifn
kcf  =  icf + kcfmod
kbw = kcf * .1
ifudge = .44
kenv  expseg .001, .01, 1, idur - .1, .0001
asig0   rand iamp
asig1   reson asig0, kcf, kbw, 2
asig = asig1*ifudge*kenv

;oscilate panning left to right to left with envelope
kpan linseg 0, .4*idur, 1, .4*idur, 0
aleft oscili iamp*kpan, icf, isine
aright = 1 - aleft

outs asig*sqrt(aleft), asig*sqrt(aright)

endin   ; instr 4  (filter instr)

;*********************************************************************************************

instr 5
; glissando uses global varible with random panning
; p1     p2    p3    p4    p5    p6     p7
;instr   start   dur   amp   freq1  freq2   function
```

```
idur = p3
iamp = p4
ioct1 = octpch(p5)        ; beginning note for gliss
ioct2 = octpch(p6)        ; ending note for gliss
ifn = p7

kenv linen iamp, idur*0.01, idur, idur*0.4
agliss line ioct1, idur, ioct2
asig   oscili kenv, cpsoct(agliss), ifn

ipan = i(gkpan)
ileft = ipan
iright = 1 - ileft

outs asig*sqrt(ileft), asig*sqrt(iright)

endin  ; instr 5  (uses global variable)

;*********************************************************************************************
instr 6  ; globally defined  random left/right panning

krange   randi   0.50, 15, .0125
gkpan  =  krange + 0.50  ; values between 0.00 and 1.00

endin  ; instr 6 creates a random number to pan left and right

;*********************************************************************************************
```

Section III

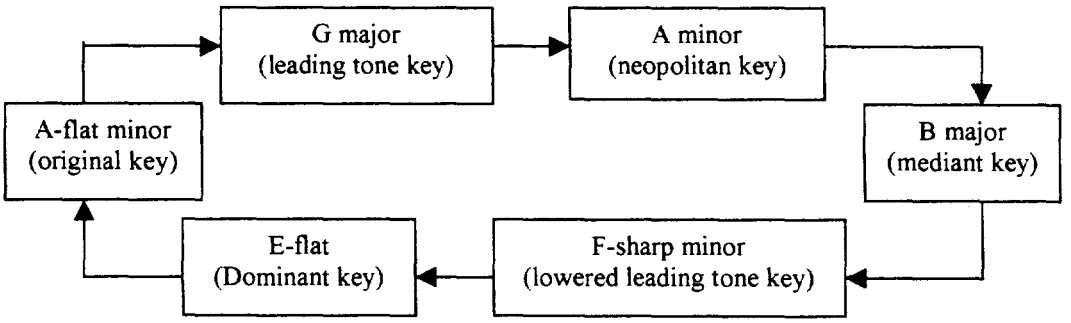
Rhapsodie

Rhapsodie[1] (Fall 1998-Spring1999)

Rhapsodie is my first acoustic composition for a composition class. I decided to write for the piano since it is my primary instrument, and at the time it was the only instrument I felt familiar enough with to write for. I worked on this with Mr. David Foley for about a year starting out with a simple melodic idea and developing it. I feel that I learned a lot from working on this particular composition both from Mr. Foley and from my music theory courses.

When beginning this piece, I sat at a piano and composed several different thematic ideas. I then developed the main theme from these ideas. It is a single simple melodic line in A-flat minor with two phrases. I broke the theme into shorter cellular ideas and combined them in different ways to develop the texture, harmony, and form of Rhapsodie. The second main theme comes in about a third of the way through the piece. This theme I also developed both in creating harmonies for it and layering it with the first theme. Surprisingly, most of the piece has just a two or three note texture even though it sounds much fuller. Being a pianist helped me in the understanding of how to use the range of the piano and the pedal to create a full sounding effect.

Rhapsodie begins and ends in A-flat minor. I chose A-flat minor because of its peculiar sound. I did not see the complexity of this piece as a deterrent but rather as a challenge. Like all tonal pieces, modulation is one of the primary devides for harmonic development. The other keys visited create the structural underpinnings for the whole work and may be expressed in the diagram below.

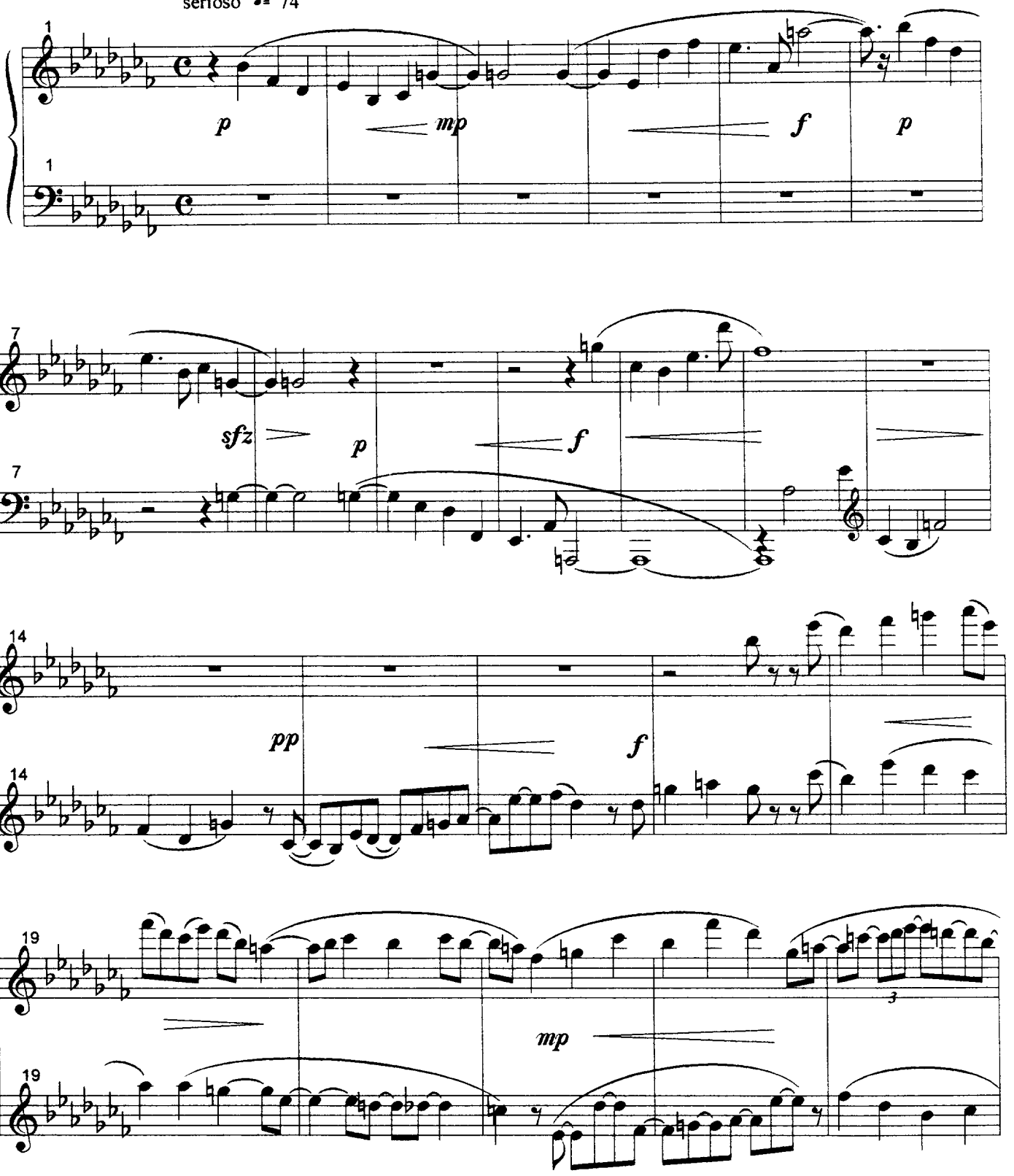


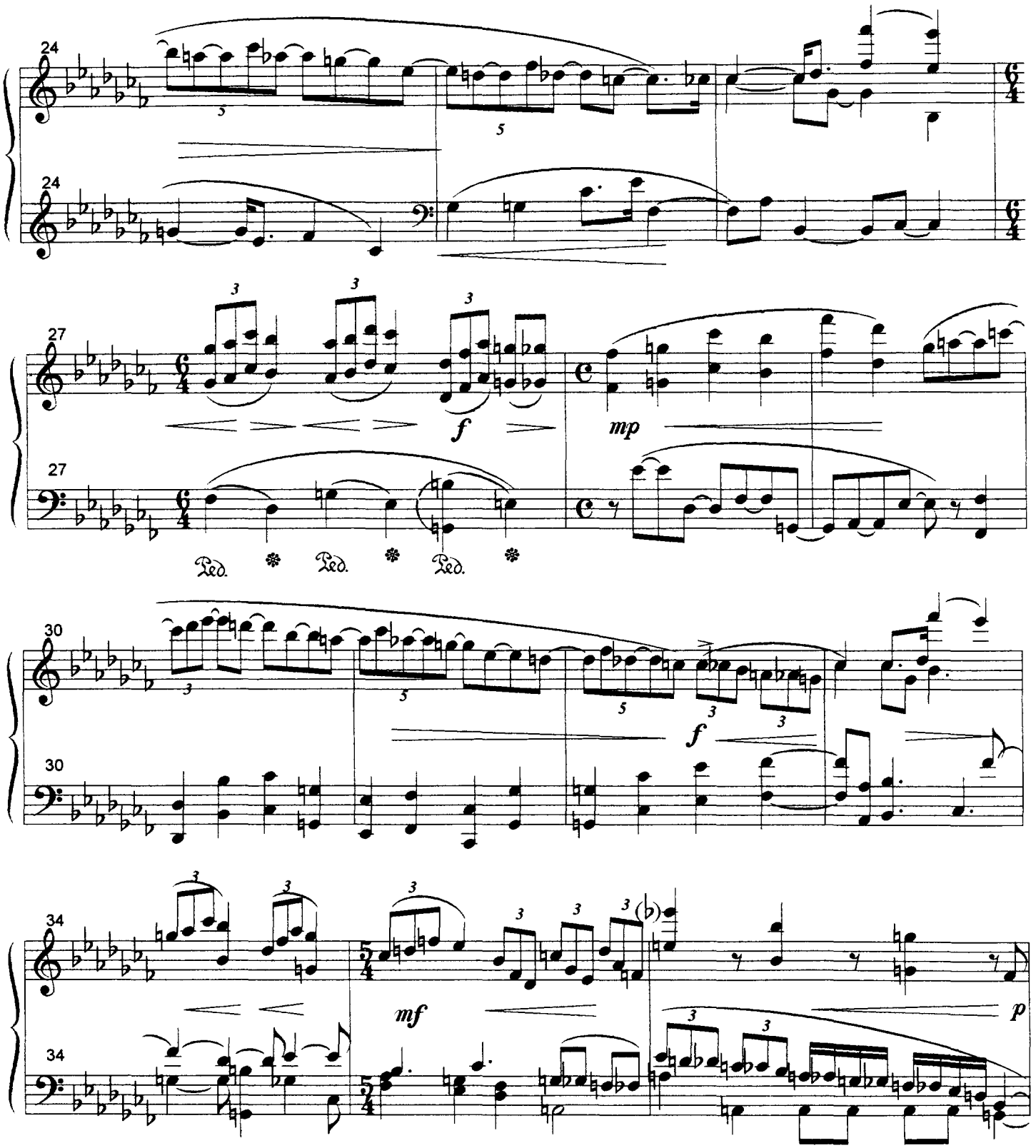
1. A term of Greek origin, properly meaning something like "fragmentary song," used in music chiefly as a designation for free fantasies of a somewhat epic, heroic, or national character (e.g., Liszt's Hungarian Rhapsodies; also works by Raff, Lalo, Dvorak, Bartok), or for compositions which, although in strict form, have a certain epic or archaic flavor (Brahms' Rhapsodies for piano). Gershwin's Rhapsody in Blue (1924) is a free fantasy in jazz idiom , modeled somewhat after Liszt's Rhapsodies. In Brahms' Rhapsodie in C, op. 53, for contralto solo, male chorus, and orchestra (often called Alto Rhapsody), the title seems to refer to the fact that it is based on a fragment from Goethe's Harzreise im Winter (Apel , 247).

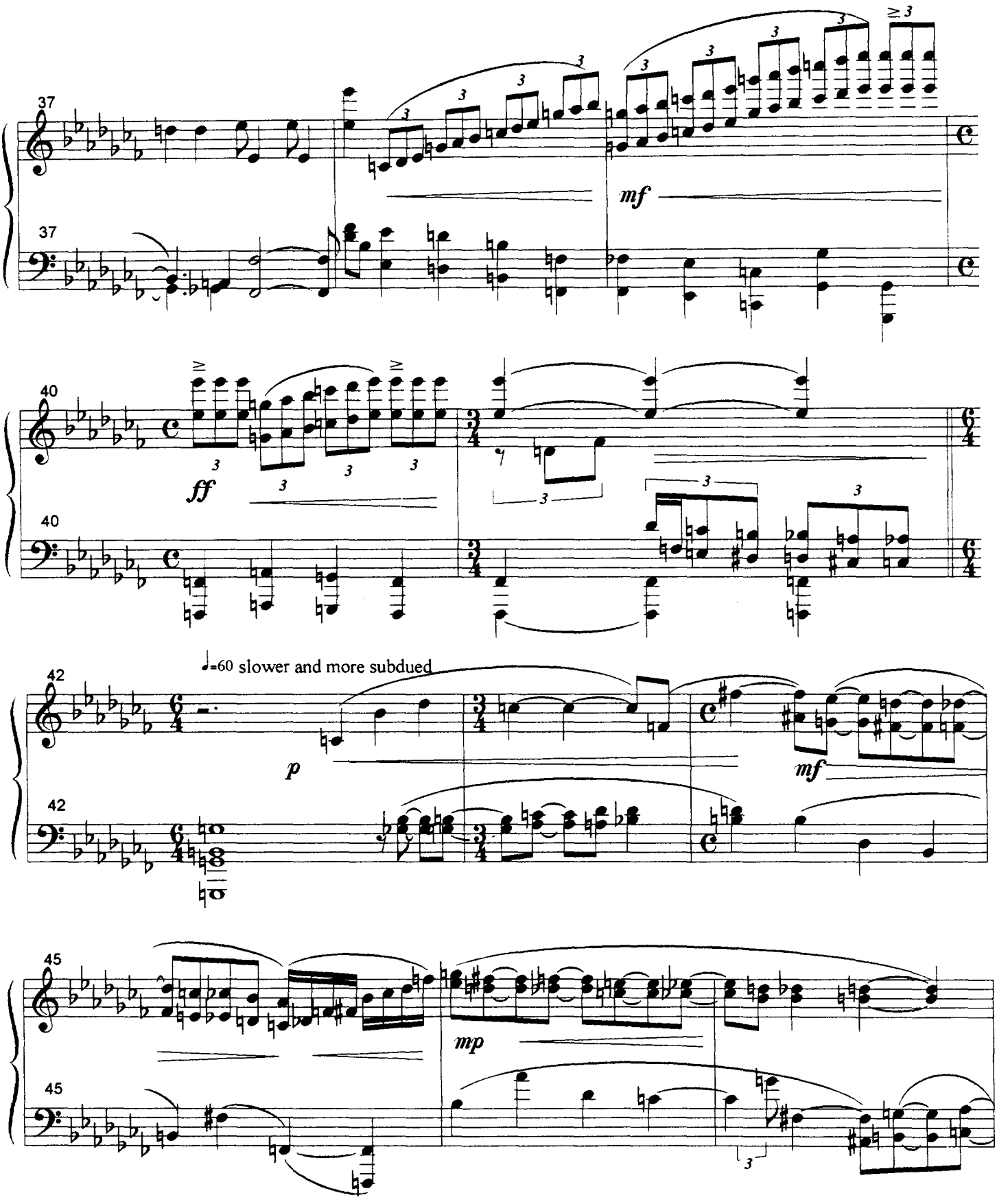
Rhapsodie

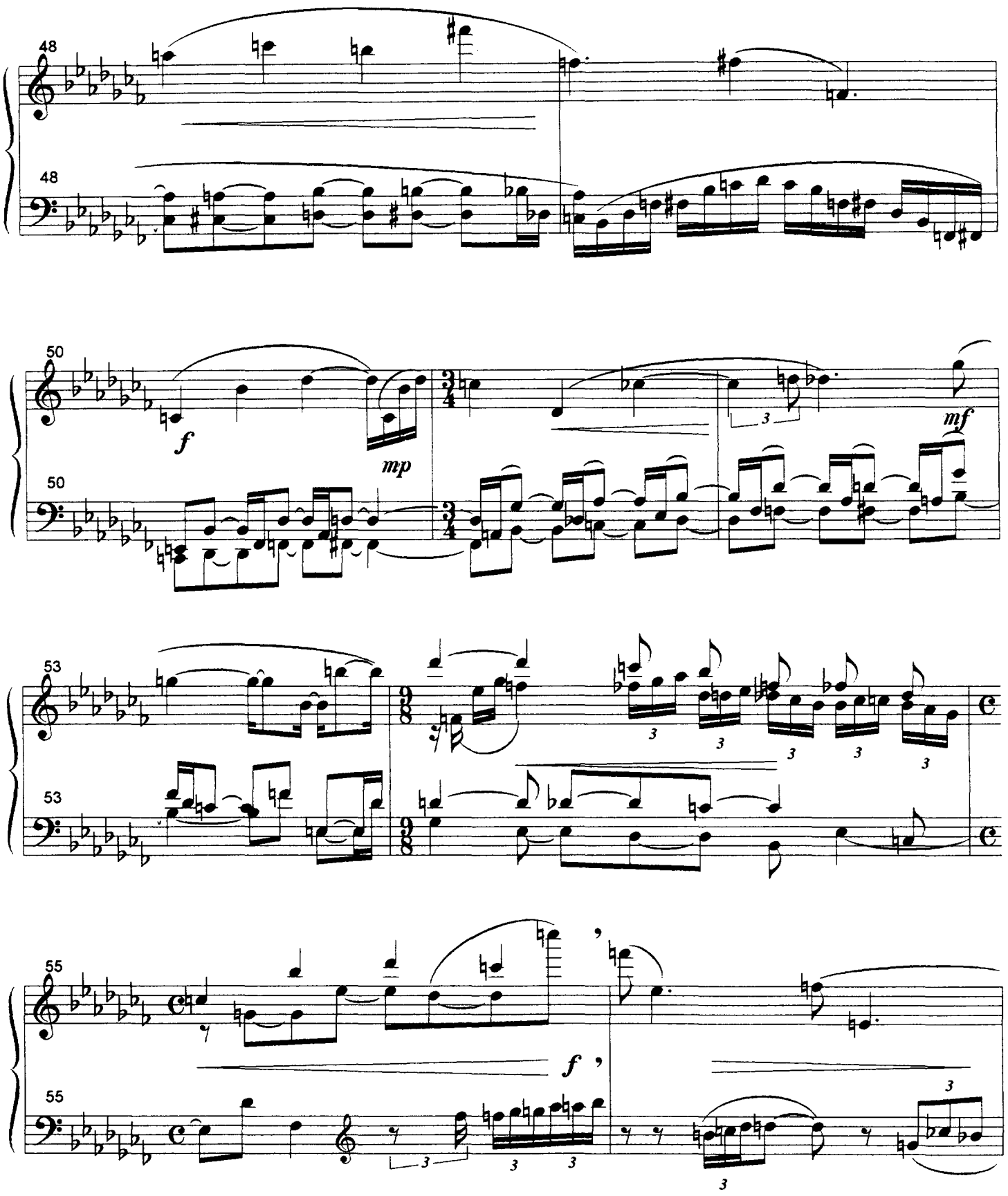
Julie Stucky
(1977-)

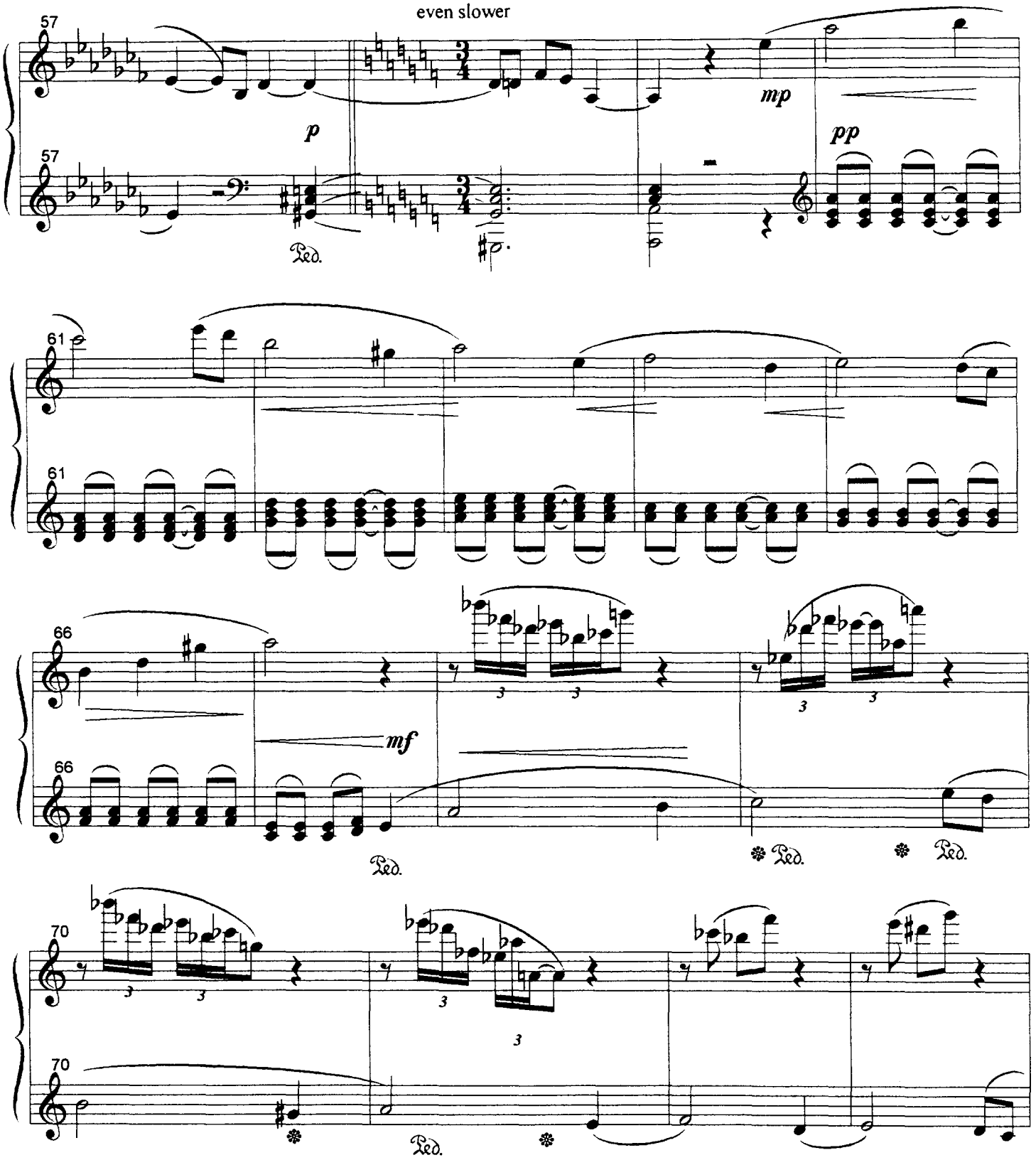
serioso ♩= 74

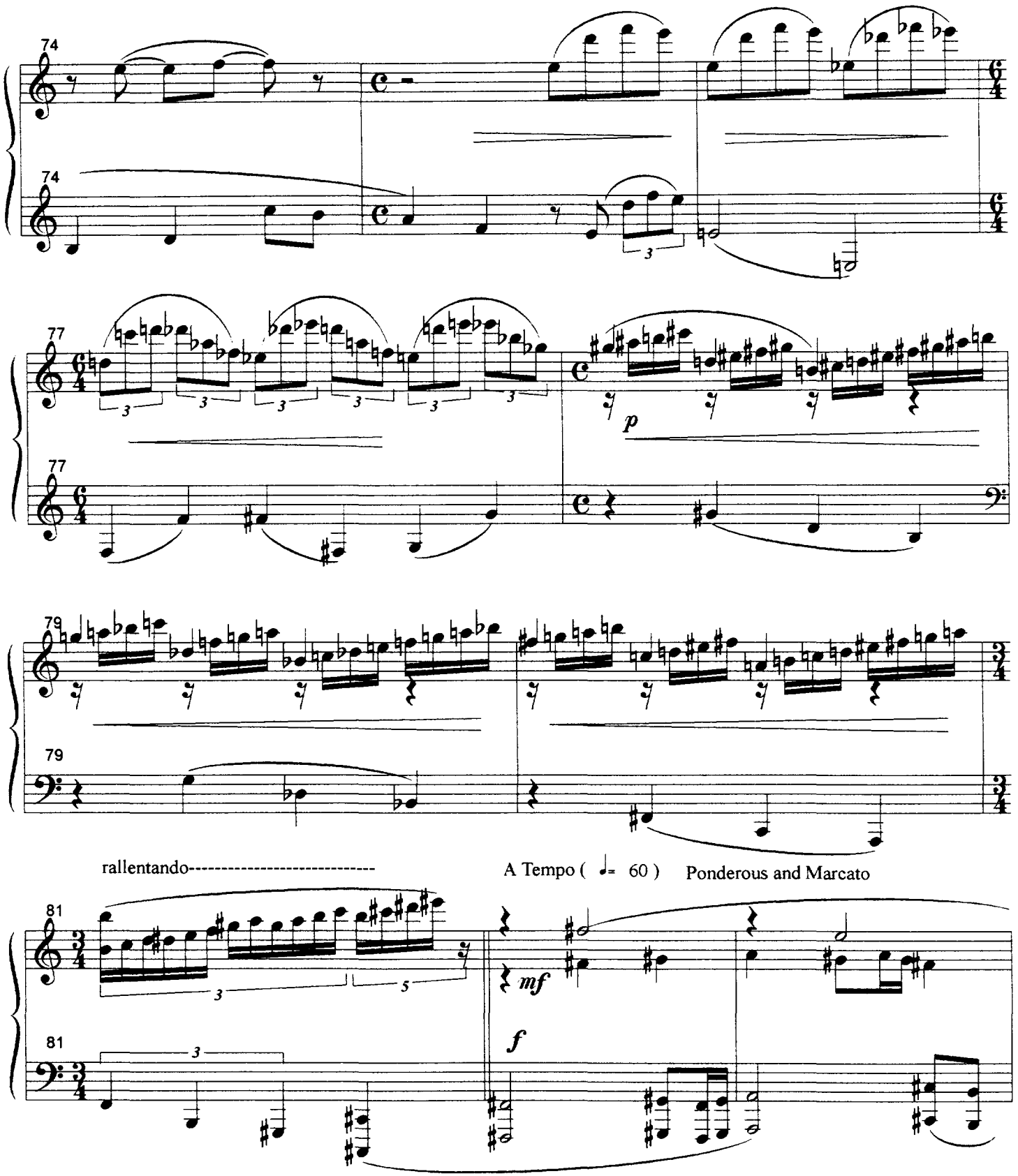


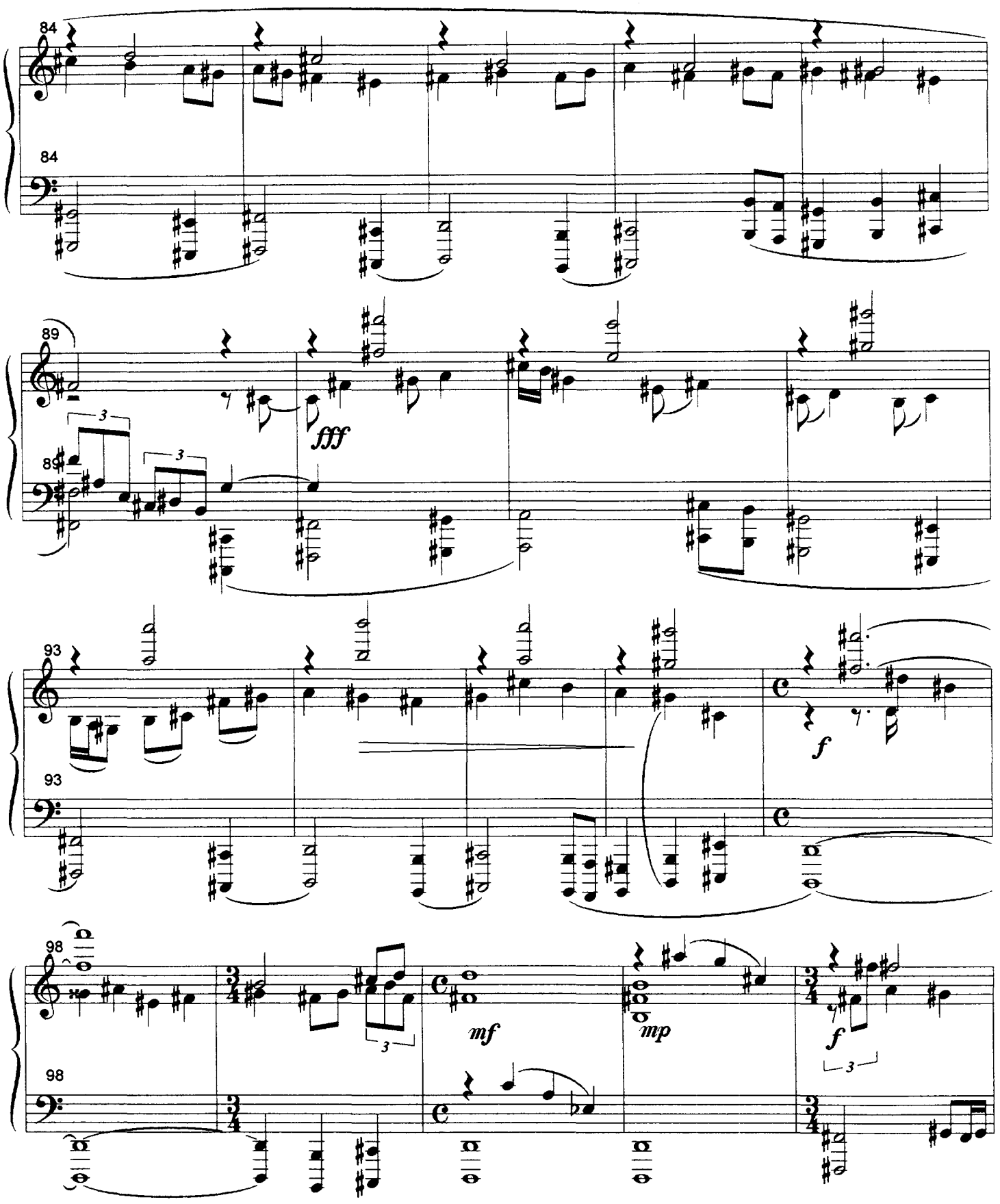

24
24
27
27
f
mp
Ped.
Ped.
Ped.
30
30
f
34
34
mf
p

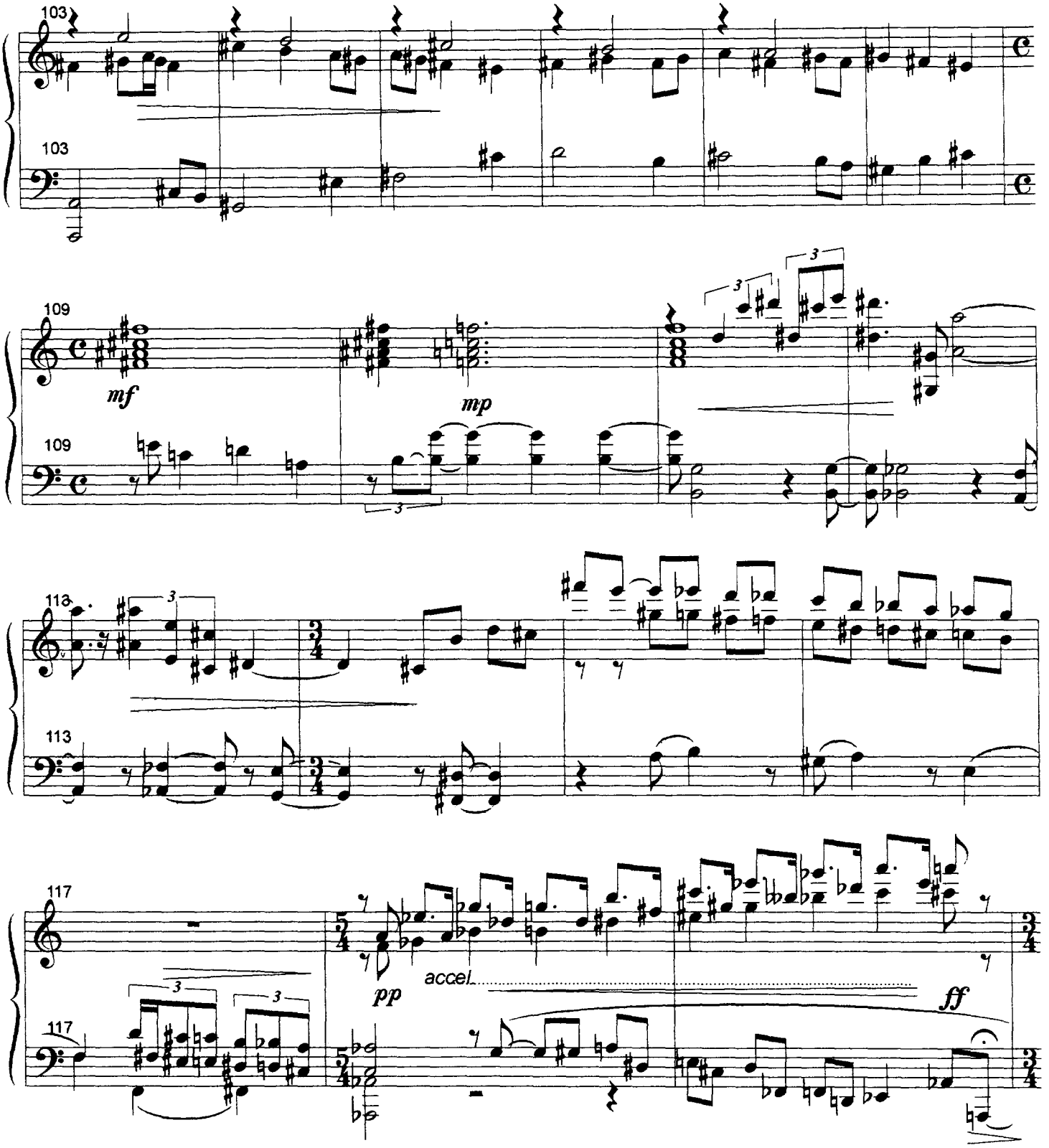

37
37
mf
40
40
ff
42
42
♩=60 slower and more subdued
p
mf
45
45
mp

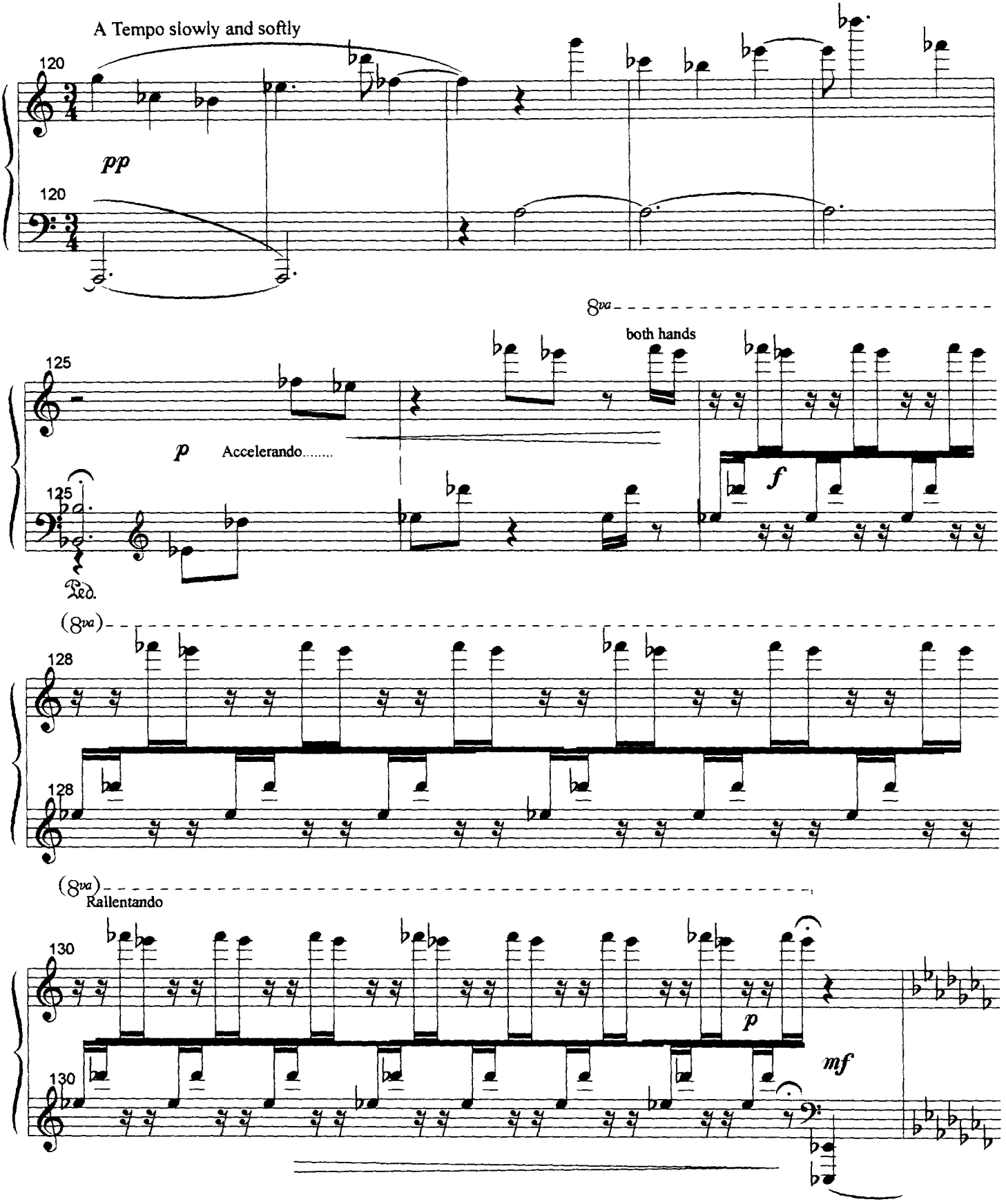

48
48
50
f
mp
3
mf
50
53
3
3
3
3
3
53
55
f
55
3
3
3
3

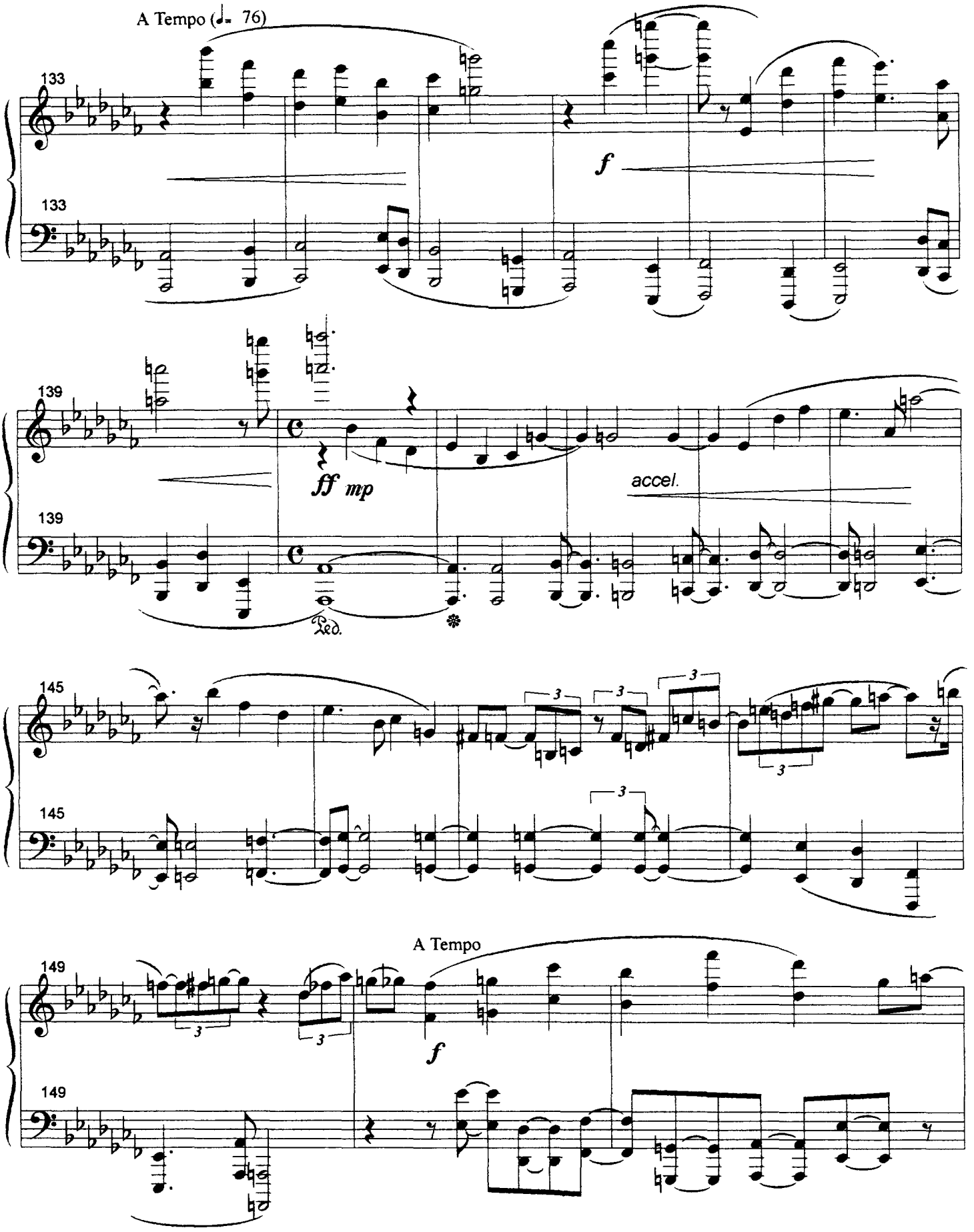

even slower
57
p
mp
pp
Ped.
61
66
mf
Ped.
Ped.
Ped.
70
Ped.

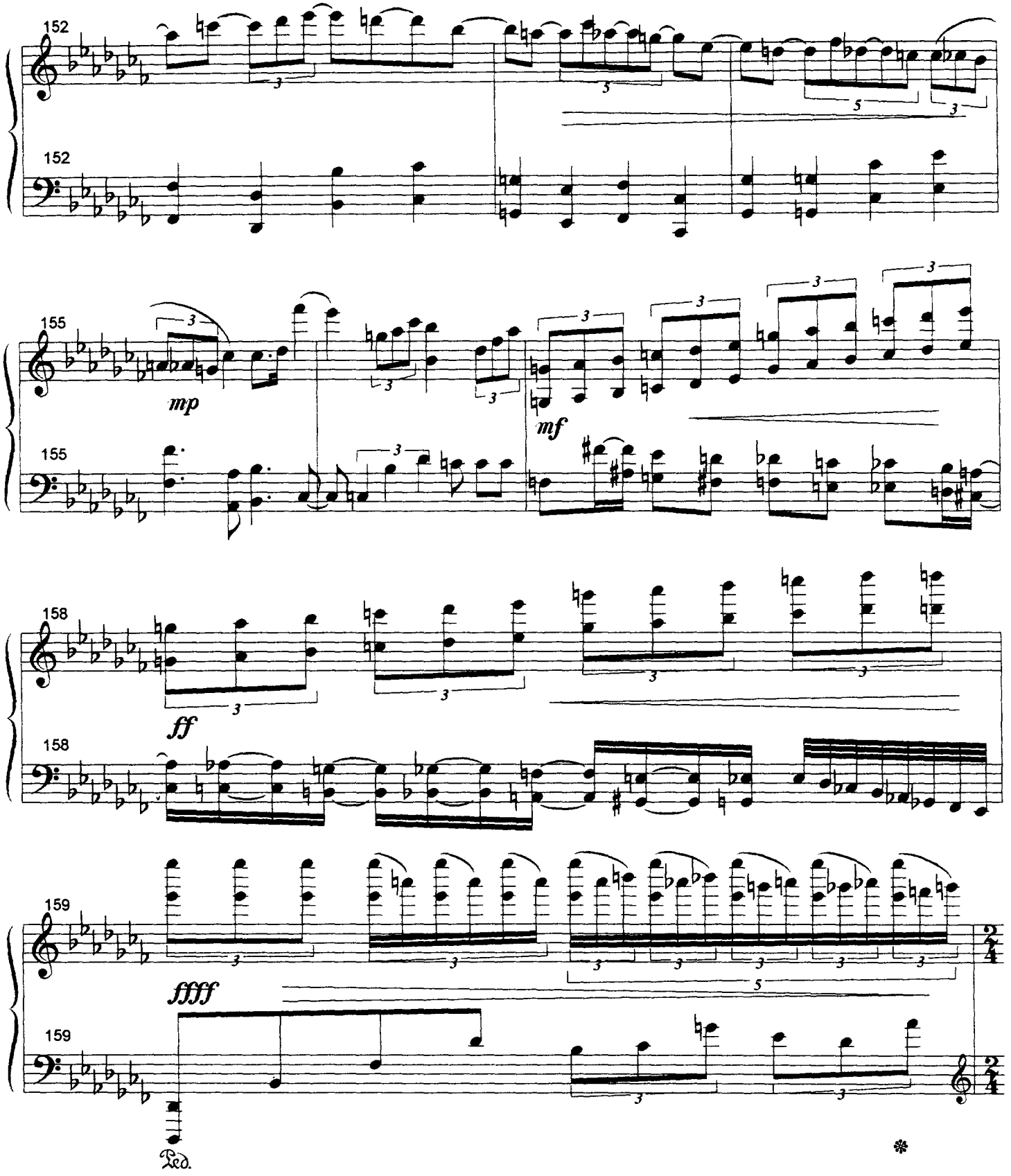

74
74
77
77
p
79
79
rallentando----------
A Tempo (♩= 60) Ponderous and Marcato
81
81
mf
f

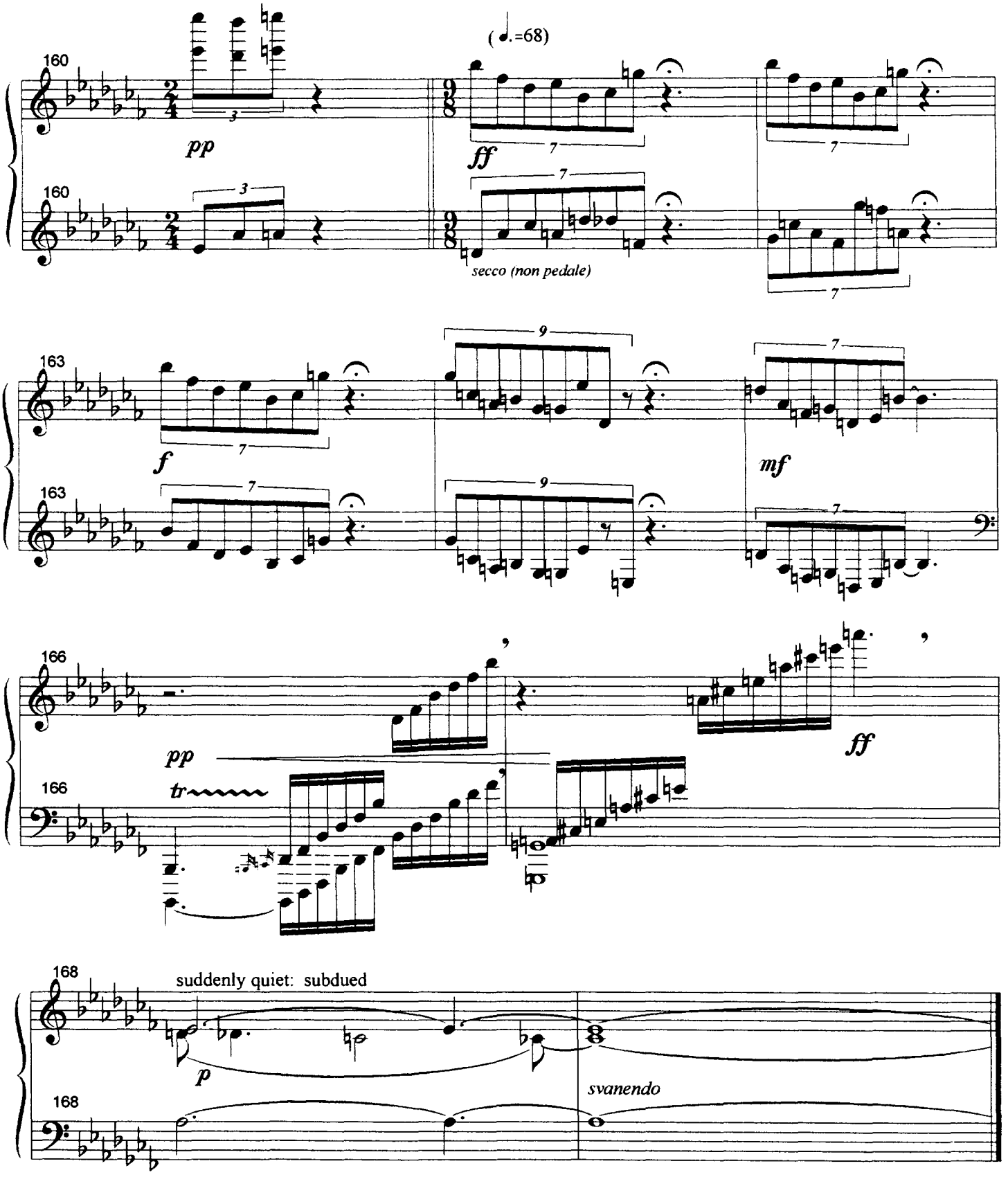

84
84
89
89
fff
93
93
f
98
98
mf
mp
f


103
103
109
mf
mp
109
113
113
117
pp
accel.
ff
117


A Tempo slowly and softly
120
pp
120
8va
both hands
125
p
Accelerando.....
f
125
Ped.
(8va)
128
128
(8va)
Rallentando
130
p
mf
130


A Tempo (♩= 76)
133
133
f
139
139
ff mp
accel.
Ped.
145
145
3
3
3
3
3
A Tempo
149
149
3
3
f


152
152
155
mp
mf
155
158
ff
158
159
ffff
159
Ped.


(♩.=68)
160
pp
ff
secco (non pedale)
163
f
mf
166
pp
tr
ff
168
suddenly quiet: subdued
p
svanendo

Section IV

Travels

Travels (Fall 1998)

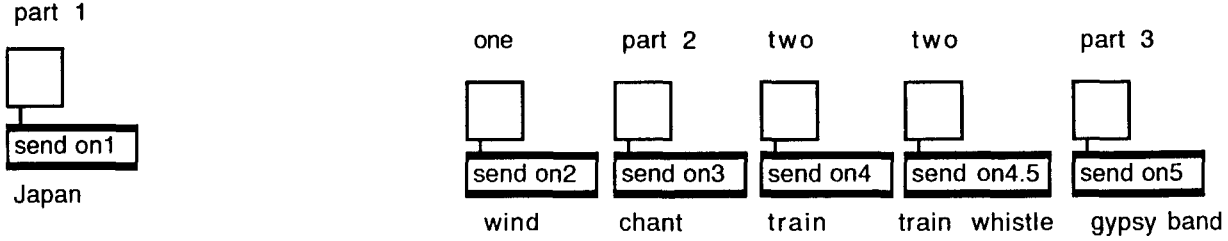
MUMET 325 taught by Dr. Jody Nagel is the class that uses the computer program MAX, which is what I used to create Travels. In MAX the user makes patches to control the MIDI data for each type of sound or melodic idea that will be used. For Travels, I made six main patches that also use some sub-patches. I have a Master Control Patch that controls all the other patches in turning them on and off and also enabling the output controller. The first section of the piece uses a Japanese pentatonic scale (pitch classes 0, 2, 3, 7, 8) and three random number generators with different ranges and bases. The three generators have staggered entrances. A Wind sound is the transition from the first section to the second section which is a three part chant. Again, the entrances are staggered, but the voices are synchronized and the interval between the voices doesn't change. The voices use the pitch set 2, 4, 6, 8, 11 for this section. To transition to the next major section, I created a train sound. This train sound starts off slowly panned totally to one speaker and then begins chugging like a train leaving the station and the sound pans from speaker to speaker. After the train, the next major section starts. This section has a gypsy feel to it as it has lots of percussive sounds and a fun beat. Also, the beat isn't steady. I put in a "passpct" that will keep a percentage of the signal from going through the patch and that makes the beat feel off occasionally. The Wind sound comes back to carry the music back to the opening Japanese pentatonic sounds. The piece ends with a melancholy feeling as the sounds gradually fade out.

The name "Travels" is most fitting for this piece. The listener starts out in one place and really travels through other ideas. When someone travels, they leave a starting point and later return to it. That is why I felt it was necessary to return to the original Japanese pentatonic section. It is not necessary to return to the other places that have been visited, nor is it necessary to use the same methods of travelling. I think Travels is one of the easier pieces to understand as the sounds and ideas are familiar to the listener. While the actual notes and order of the notes were randomly generated, the sounds playing the notes were easily recognizable.

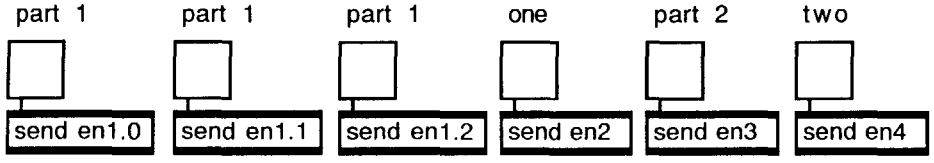
Master Control

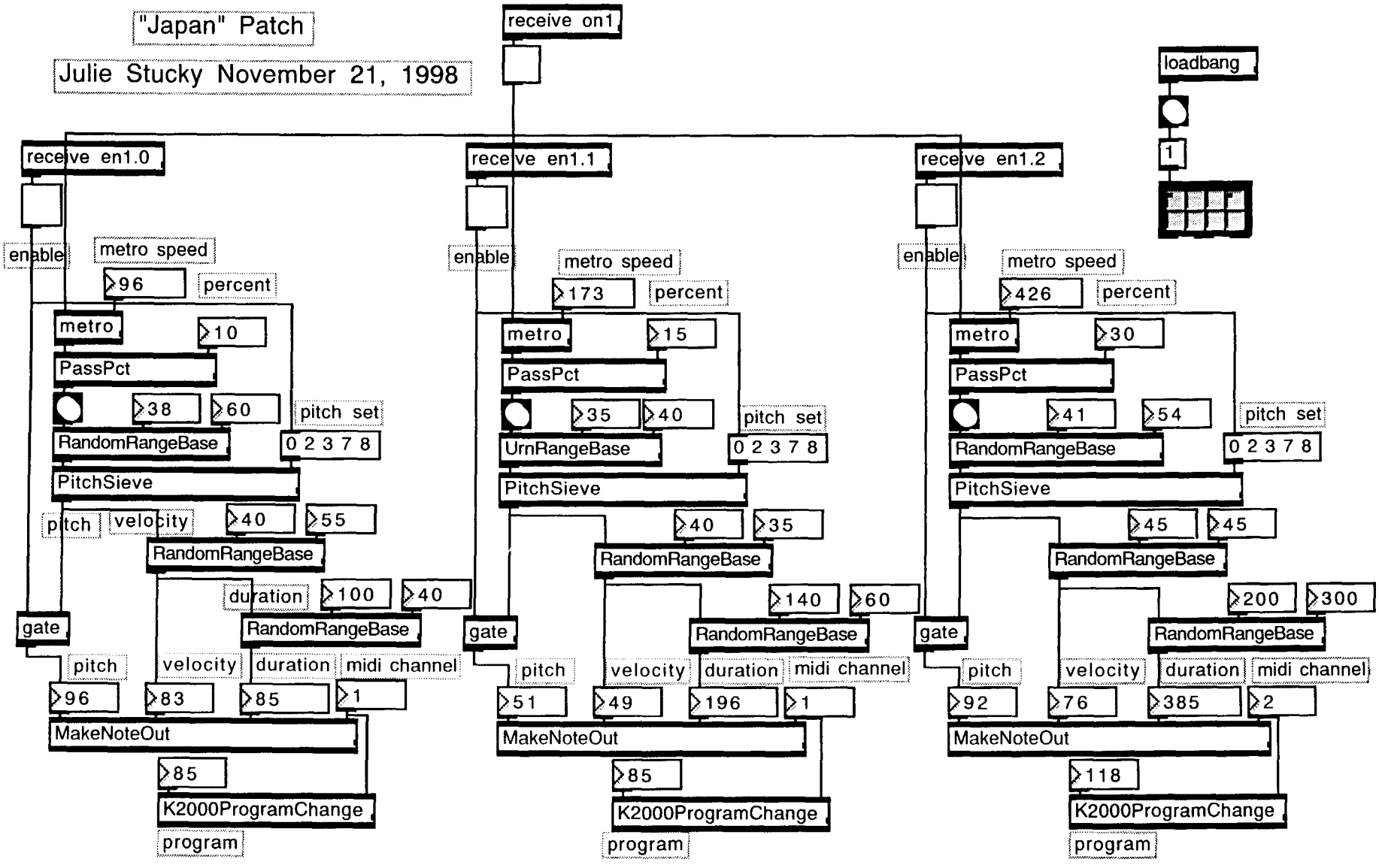
Julie Stucky November 21, 1998

On/Off



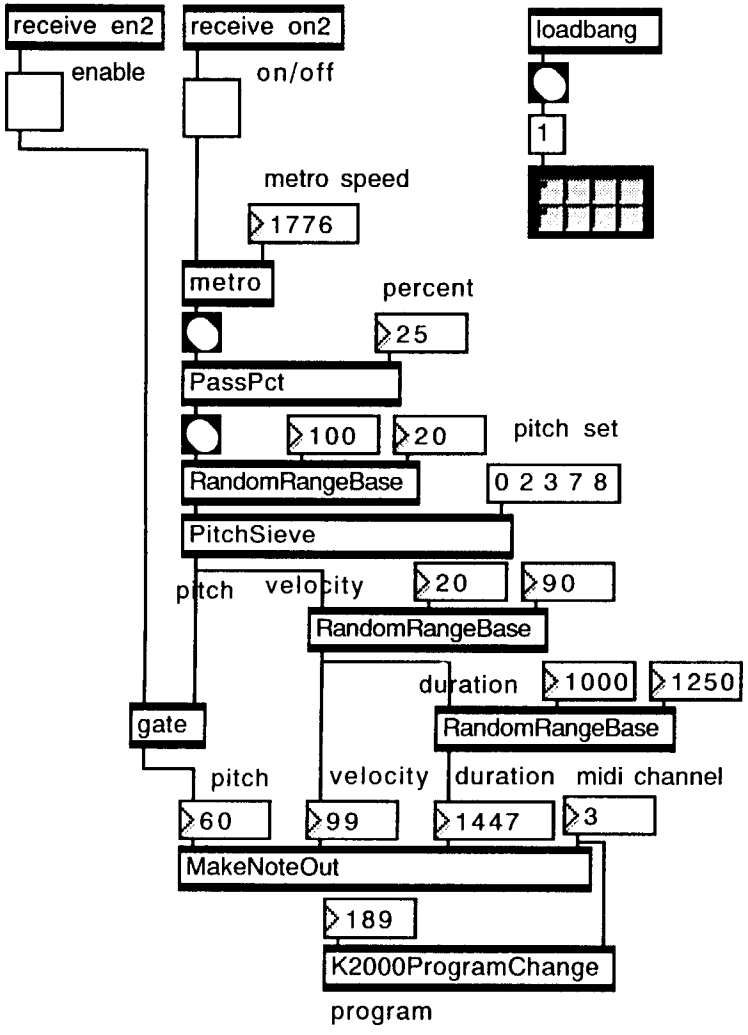
Enable




"Japan" Patch
Julie Stucky November 21, 1998
receive on1
loadbang
1
receive en1.0
receive en1.1
receive en1.2
enable
metro speed
96
percent
metro
10
PassPct
38
60
pitch set
RandomRangeBase
0 2 3 7 8
PitchSieve
pitch
velocity
40
55
RandomRangeBase
duration
100
40
RandomRangeBase
gate
pitch
velocity
duration
midi channel
96
83
85
1
MakeNoteOut
85
K2000ProgramChange
program
enable
metro speed
173
percent
metro
15
PassPct
35
40
pitch set
UrnRangeBase
0 2 3 7 8
PitchSieve
40
35
RandomRangeBase
140
60
RandomRangeBase
gate
pitch
velocity
duration
midi channel
51
49
196
1
MakeNoteOut
85
K2000ProgramChange
program
enable
metro speed
426
percent
metro
30
PassPct
41
54
pitch set
RandomRangeBase
0 2 3 7 8
PitchSieve
45
45
RandomRangeBase
200
300
RandomRangeBase
gate
pitch
velocity
duration
midi channel
92
76
385
2
MakeNoteOut
118
K2000ProgramChange
program

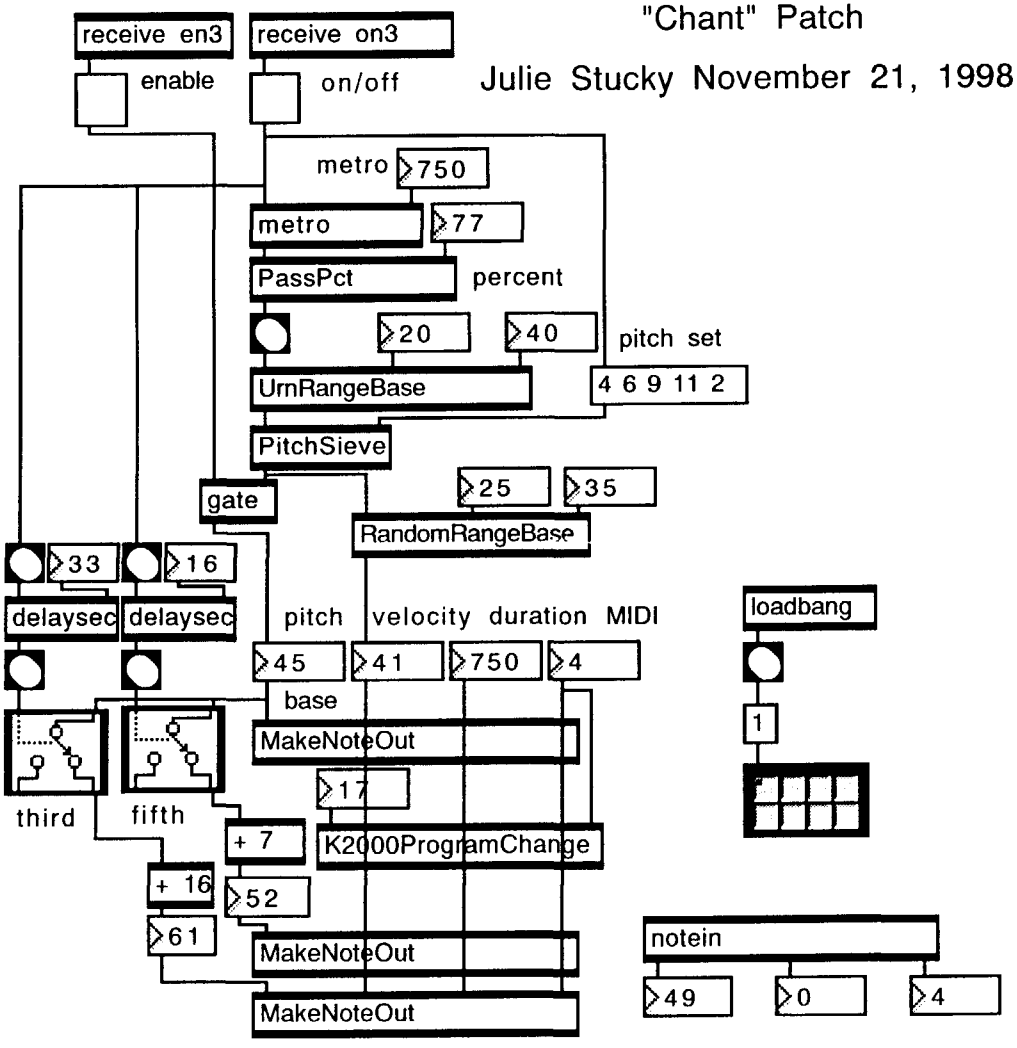
"Wind" Patch

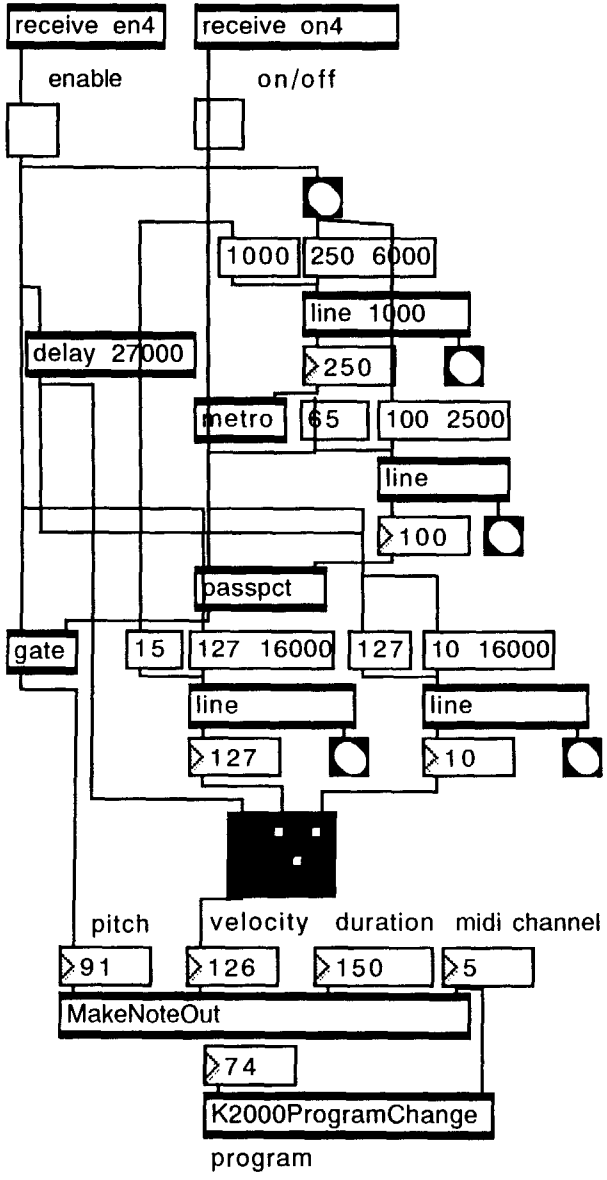
Julie Stucky November 21, 1998

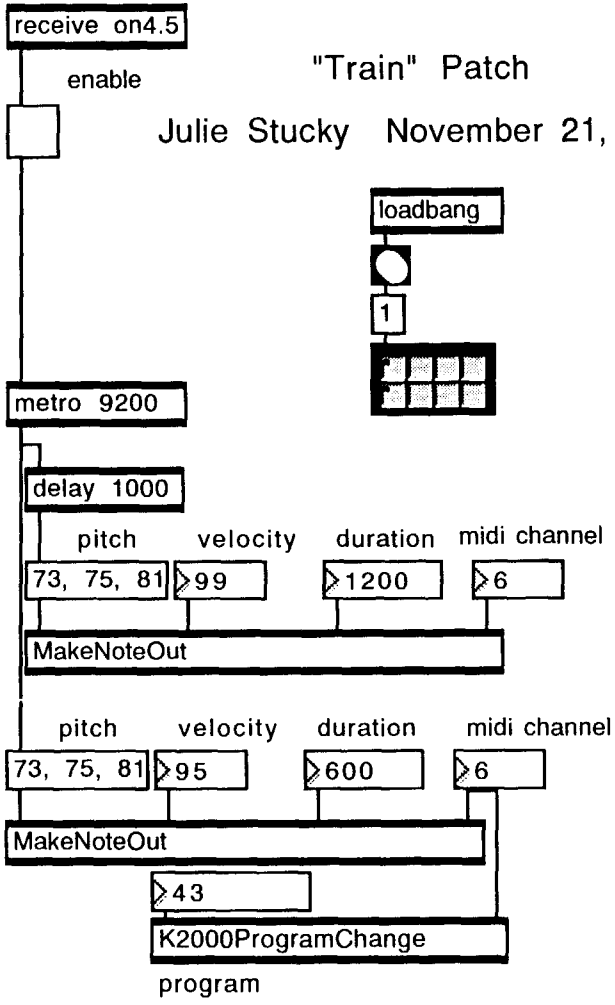


"Chant" Patch

Julie Stucky November 21, 1998





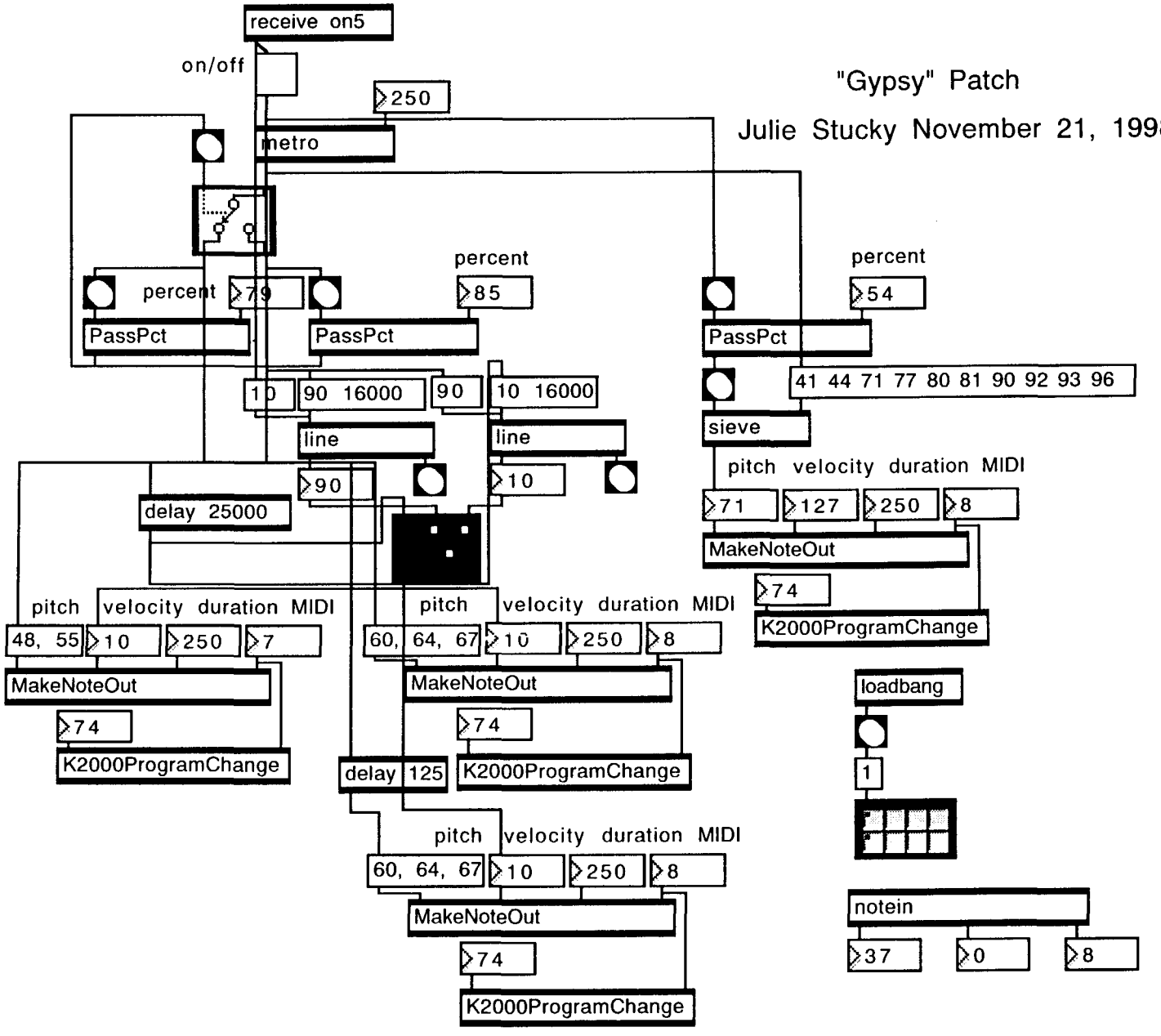


"Train" Patch

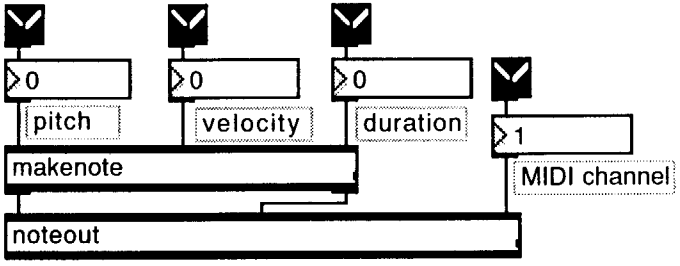
Julie Stucky November 21, 1998

"Gypsy" Patch

Julie Stucky November 21, 1998

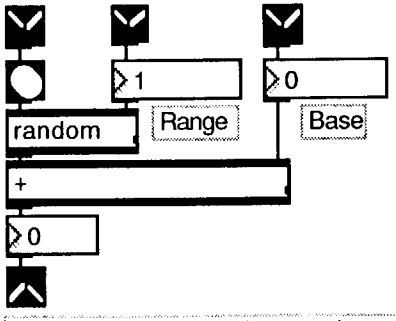


"makenoteout"



makenoteout , like the name suggests, sends out a MIDI signal with pitch, velocity, duratioin, and MIDI channel information. It is a small patch used in larger patches to save on time and space.

"RandomRangeBase"

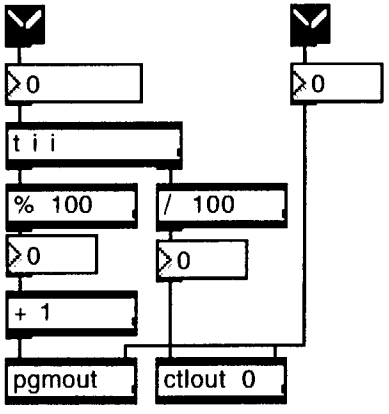


RandomRangeBase is a random number generator where the user can set a defined range of numbers over a variable base number.

Julie Stucky November 21, 1998

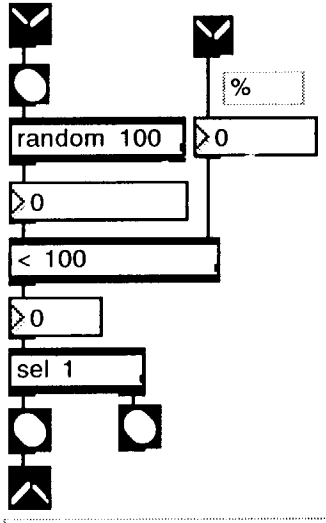
Miscellaneous smaller patches used in other larger patches

"K2000ProgramChange"



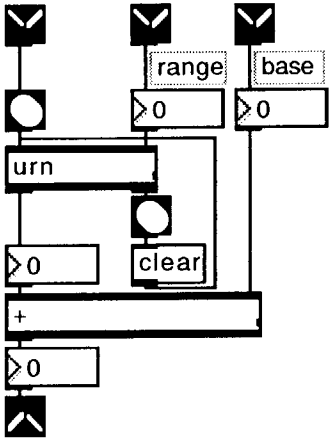
K200ProgramChange will send out a MIDI signal to the Kurzweil K2000 synthesizer to change the program on a given MIDI channel.

"PassPct"



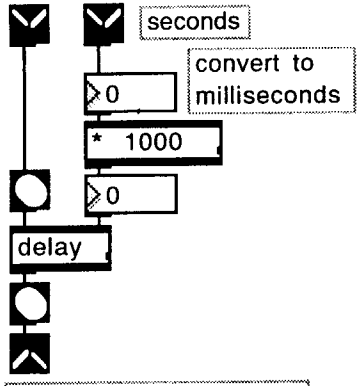
Passpct is a patch that will pass only a certain percentage of "bangs" through the patch based on a user provided percentage.

"UrnRangeBase"



UrnRangeBase is similar to RandomRangeBase except that it will use every number in the given range before repeating any of the numbers.

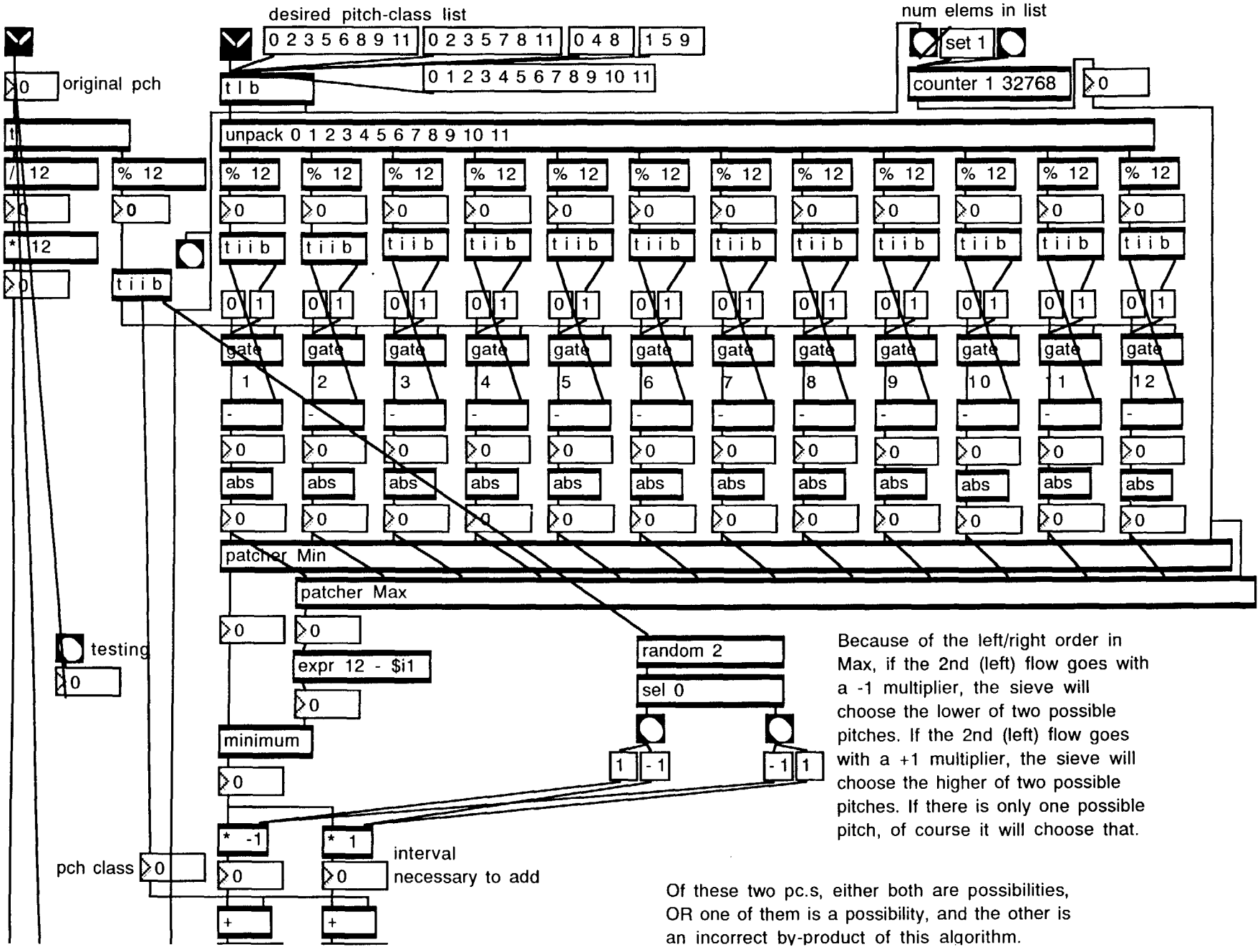
"delaysec"



delaysec is a patch that will delay a given signal however many seconds the user specifies.

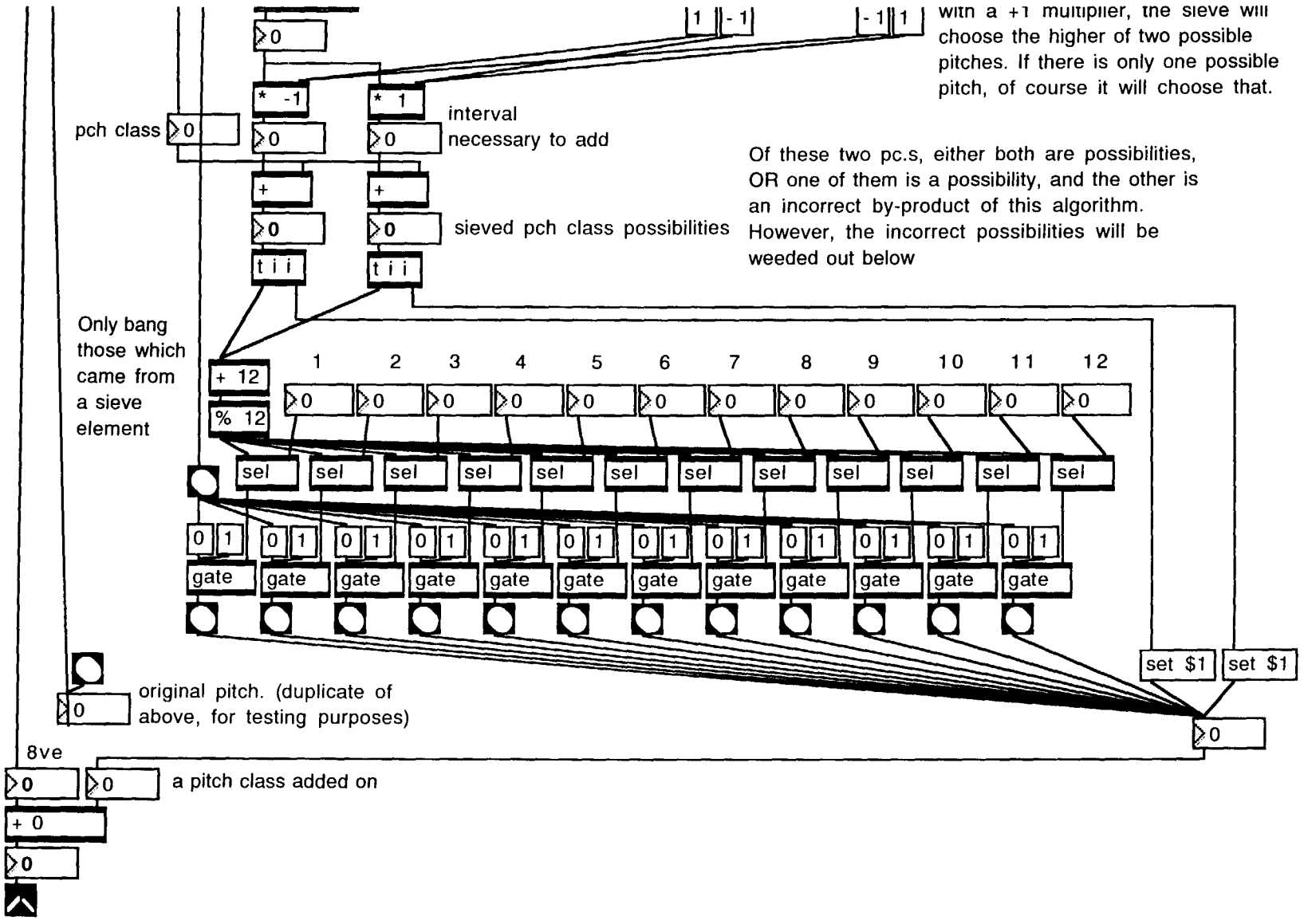
PitchSieve, rev., by Jody Nagel, 1997

Any pitch list length from 1 to 12. In the case of equidistant "wrong" pitches, a random choice is made when converting to the nearest "right" pitch.



Because of the left/right order in Max, if the 2nd (left) flow goes with a -1 multiplier, the sieve will choose the lower of two possible pitches. If the 2nd (left) flow goes with a +1 multiplier, the sieve will choose the higher of two possible pitches. If there is only one possible pitch, of course it will choose that.

Of these two pc.s, either both are possibilities, OR one of them is a possibility, and the other is an incorrect by-product of this algorithm.


with a +1 multiplier, the sieve will choose the higher of two possible pitches. If there is only one possible pitch, of course it will choose that.
pch class
interval necessary to add
Of these two pc.s, either both are possibilities, OR one of them is a possibility, and the other is an incorrect by-product of this algorithm. However, the incorrect possibilities will be weeded out below
sieved pch class possibilities
Only bang those which came from a sieve element
original pitch. (duplicate of above, for testing purposes)
8ve
a pitch class added on